The EDISON ELECTRIC INSTITUTE BULLETIN

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GEOGRAPHY & INDUSTRY

June 1956

Published Monthly by Edison Electric Institute

EEI CONVENTION ISSUE

Harllee Branch, Jr.

The Hon. Frederic R. Coudert, Jr.

Louis V. Sutton

Boyd Campbell

B. L. England

H. S. Bennion

Alan H. Temple

Gordon M. Freeman

James F. Fairman

Charles E. Parker

Mark W. Cresap, Jr.

Dr. F. A. Harper

L. R. Boulware

The Hon. Frank T. Bow

ELECTRICAL RESEARCH STATISTICS
THE ELECTRIC LIGHT AND POWER INDUSTRY

Current Statistical Data Covering 100 Per Cent of Industry

(Includes Investor-Owned Companies, Cooperatives, and Government-Owned Utilities)

March, 1955-1956

SOURCE AND DISPOSAL OF ENERGY—MONTH OF MARCH

	1956	1955	%
NET GENERATION* (Kwhrs in Thousands)			
By Fuel Burning Plants	38,565,210	34,050,693	+13.3
By Water Power Plants	11,778,567	10,398,734	+13.3
Total Generation	**50,343,777**	**44,449,427**	**+13.3**
Add—Net Imports Over International Boundaries	162,255	304,092	−46.7
Less—Company Use	143,533	130,604	+ 9.9
Less—Energy Used by Producer	1,376,710	1,015,253	+35.6
Net Energy for Distribution	**48,985,789**	**43,607,662**	**+12.3**
Lost and Unaccounted for	5,247,919	5,214,465	+ 0.6
Sales to Ultimate Customers	**43,737,870**	**38,393,197**	**+13.9**

CLASSIFICATION OF SALES

NUMBER OF CUSTOMERS—As of March 31st			
Residential or Domestic	44,672,131	43,416,370	+ 2.9
Rural (Distinct Rural Rates)	1,650,941	1,605,014	+ 2.9
Commercial or Industrial:			
Small Light and Power	6,042,819	5,969,178	+ 1.2
Large Light and Power	287,093	276,655	+ 3.8
Other Customers	168,825	167,088	+ 1.0
Total Ultimate Customers	**52,821,809**	**51,434,305**	**+ 2.7**
KILOWATTHOUR SALES—During Month of March (Kwhrs in Thousands)			
Residential or Domestic	11,561,508	10,374,562	+11.4
Rural (Distinct Rural Rates)	778,364	719,257	+ 8.2
Commercial or Industrial:			
Small Light and Power	6,862,081	6,268,548	+ 9.5
Large Light and Power	22,775,186	19,363,294	+17.6
Street and Highway Lighting	399,647	370,518	+ 7.9
Other Public Authorities	905,572	830,406	+ 9.1
Railways and Railroads:			
Street and Interurban Railways	222,509	236,858	− 6.1
Electrified Railroads	182,005	178,785	+ 1.8
Interdepartmental	50,998	50,969	+ 0.1
Total to Ultimate Customers	**43,737,870**	**38,393,197**	**+13.9**
Revenue from Ultimate Customers (Thousands)	**$714,161**	**$650,024**	**+ 9.9**

RESIDENTIAL OR DOMESTIC SERVICE

AVERAGE CUSTOMER DATA—For 12 months ended March 31, 1956			
Kilowatthours per Customer	2,819	2,607	+ 8.1
Average Annual Bill	$74.14	$69.87	+ 6.1
Revenue per Kilowatthour	2.63¢	2.68¢	− 1.9

* By courtesy of the Federal Power Commission.

THE EDISON ELECTRIC INSTITUTE BULLETIN is published monthly by the Edison Electric Institute, an association of electric light and power companies in the United States and its territorial possessions. Its affiliate members consist of members of the Canadian Electrical Association.

The objectives of the Edison Electric Institute are:

The advancement in the public service of the art of producing, transmitting, and distributing electricity and the promotion of scientific research in such field.

The ascertainment and making available to the members and the public of factual information, data, and statistics relating to the electric industry.

To aid its operating company members to generate and sell electric energy at the lowest possible price commensurate with safe and adequate service, giving due regard to the interests of consumer, investor, and employee.

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Closing date for the BULLETIN is the tenth of the month preceding the month of issue.

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The EDISON ELECTRIC INSTITUTE BULLETIN

June, 1956

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From the portrait by Thomas E. Stephens

COLONEL HOWARD SHARP BENNION

We love him as a gentleman, we respect him as a capable executive, we admire him as our former trusted leader, we honor him as a great American. May the Good Lord whom he has worshipped so humbly bless him with every good and perfect gift!—*Louis V. Sutton in the industry's tribute to Col. Bennion at the 24th Annual Convention, Edison Electric Institute.*

The EDISON ELECTRIC INSTITUTE
BULLETIN

Positive Thinking and Positive Action Mark 24th Annual EEI Convention

CONFIDENCE that our industry will continue to anticipate and provide the future power requirements of a growing America pervaded the 24th Annual EEI Convention in Atlantic City, June 4-6. That members of the industry will—in keeping with the Convention theme —"Tell Our Story—Go Forward!" was assured by the tenor of the formal addresses, as well as by the many side discussions which punctuated the three day meeting.

Nearly 3500 delegates and guests, an all-time record attendance, heard men outstanding in their fields discuss the industry's progress to date and the challenges of the future with respect to atomic power development, finance, sales, public and labor relations, and engineering. Other speakers addressed the Convention on subjects concerning Federal power, the technical manpower shortage, and the Federal budget.

Board Acts on Atomic Power

Perhaps the most significant development of the three day convention, and one which will have the most far-reaching consequences, was the action taken by the Board of Directors which will coordinate, accelerate, and expand on a national scale the development of nuclear power by investor-owned electric utilities. On recommendation of the Institute's Committee on Atomic Power, the Board established a Technical Appraisal Task Force on Atomic Power Reactors, authorized the appointment of a full-time Executive Secretary for the Committee, called a Conference of Presidents of member companies, and endorsed the formation of a national power reactor evaluation group.

The Technical Appraisal Task Force will review various reactor types and designs for the express purpose of recommending to member companies of EEI the types and designs which appear to have promise of feasibility for the production of electric power. The Task Force will consist of independent nuclear engineers and scientists, and executives of both EEI member companies and equipment manufacturing companies.

A member of the EEI staff, Max Ulrich, was appointed Executive Secretary of the Committee on Atomic Power. He will assist that committee and the members of the Institute in furthering the development of atomic power.

The Conference of Presidents will be held as soon as practical, for the purpose of reviewing the atomic power program in the United States. Particular consideration will be given to the role of the investor-owned power companies, so that necessary decisions can be made on the means by which their further and continuing participation in this program on an expanded and accelerated scale may be brought about.

The function of the national evaluation group is to provide a continuing means for the scientific, engineering, and economic evaluation of power reactor types and designs and selection of those which merit development and construction.

President's Press Conference

Retiring President Harllee Branch, Jr., in a statement to the press preceding the Convention, noted that "In the nine years since 1947, there has been a doubling, or more, in the major growth indices: generating capacity, kilowatthour sales, investment in plant, and gross revenues. . . . The electric companies have made astounding growth in physical plant, in enormously expanded service to our customers, and in technical application of new concepts of generation

OFFICERS OF EEI

D. S. KENNEDY, *President*
Oklahoma Gas & Electric Company
Oklahoma City, Oklahoma

J. W. MCAFEE, *Vice President*
Union Electric Company of Missouri
St. Louis, Missouri

EDWIN VENNARD, *Vice President and Managing Director*
420 Lexington Avenue
New York 17, New York

H. S. SUTTON, *Treasurer*
Consolidated Edison Company of New York, Incorporated
New York, New York

A. B. MORGAN, *Secretary and Assistant Managing Director*
420 Lexington Avenue
New York 17, New York

DONALD S. KENNEDY

Newly Elected President of the Edison Electric Institute

NEW PRESIDENT OF THE INSTITUTE

DONALD S. KENNEDY, Chairman of the Board and President of the Oklahoma Gas and Electric Co., has been elected President of the Edison Electric Institute by its Board of Directors. Installation of the new President was made on June 6 at the closing session of the Institute's 24th Annual Convention. Vice President of the Institute for the past year, Mr. Kennedy succeeds Harllee Branch, Jr., President of the Georgia Power Co., as head of the nation's electric utility trade association.

Mr. Kennedy has been chairman of the board and president of Oklahoma Gas and Electric since 1949.

Born in Rushville, Ind., on January 5, 1902, Mr. Kennedy received his early education in the public schools at Indianapolis, and then attended Butler University for three years. He completed his formal education at the University of Arizona, graduating in 1923 with a degree in Accounting and Economics. He joined the Oklahoma Gas and Electric Co. in July of that year as a bookkeeper in the Accounting Department, and progressed steadily through various positions to that of traveling auditor. In 1927 he married Miss Gertrude Hacker, daughter of one of Oklahoma's pioneer settlers. Mr. Kennedy was promoted the following year to the position of Auditor of the company's Eastern Division with headquarters at Muskogee, Okla.

In 1940 Mr. Kennedy was named assistant to the treasurer and returned to the company's headquarters. Two years later, in 1942, he became vice president, treasurer, and a director, which offices he held simultaneously until 1947 when he was relieved of his duties as treasurer so that he could devote full time to administrative work. Mr. Kennedy was elected executive vice president in 1947, and held that office until 1949 when he was elected chairman of the board of directors and president of the company.

"Boost your state, your business . . . anything in which you are interested . . . " Mr. Kennedy has said. A practitioner of what he preaches, he has been a driving force in many activities not only in Oklahoma City, headquarters of his company, but throughout the entire state.

Frequently called upon by outside organizations to give of his time and talents, Mr. Kennedy is an enthusiastic and energetic supporter of many business and civic activities. He serves on the board of directors of the First National Bank and Trust Co. of Oklahoma City, the YMCA, Oklahoma State Fair Association, Oklahoma Medical Research Foundation, Oklahoma City Frontiers of Science, Oklahoma City Symphony Orchestra, Oklahoma City Community Chest, Oklahoma City Chamber of Commerce and Oklahoma Industries, Inc., and is a past president of the last three. He is a Trustee of the Oklahoma City Art Center and the Midwest Research Institute and Chairman of the National Parents Committee of Randolph-Macon Woman's College in Lynchburg, Va.

Perhaps none of his many activities have appealed to Mr. Kennedy with such a continuous challenge as the industrial expansion of Oklahoma. Long recognizing that a proper balance between agriculture, petroleum and industry is essential to a progressive and prosperous economy, he has done much to foster this kind of balance. Through his endeavors many eastern financial institutions have sent representatives into Oklahoma and, in so doing, have formed an entirely new concept of the conditions and potential in that state. Governor Gary appointed Mr. Kennedy a member of the newly-formed Oklahoma Economic Development Committee.

Mr. Kennedy is a member of All Souls Episcopal Church and a 32nd Degree Mason. Among his club affiliations are the Tower Club, Beacon Club, Oklahoma Club, Touchdown Club, and Oklahoma City Golf and Country Club, all in Oklahoma City, the Union League Club of Chicago, Rolling Rock Club of Pittsburgh, and the University Club of New York City.

and transmission," he said, and stated further that "The investor-owned electric companies' challenges and problems are being tackled with courage, intelligence and vigor."

In reply to questions by members of the press, Mr. Branch said that EEI is "unalterably opposed" to the Gore Bill (S 2725) which would direct the Atomic Energy Commission to "construct six nuclear power facilities designed to demonstrate the practical value of utilization facilities for industrial or commercial facilities," and legislation of this general type. Citing the "distinct and adequate progress" being made by investor-owned utility companies in this field, he referred to the projects already undertaken by private enterprise to demonstrate the practical value of power reactors for industrial or commercial purposes, and the ability of the United States to maintain world leadership through continuation of the present private development as the principal reasons for this opposition.

Mr. Branch opened the First General Session on Monday afternoon, June 4. During that and the following two days, 14 men, all authorities in their respective fields, addressed the delegates. In addition, an hour-long dramatic presentation of the industry's multi-million dollar rewiring program brought many of the top executives of companies participating in this program to the platform for brief expressions of cooperation on this important program. The NBC-TV commentator and star of the "TODAY" show, Dave Garroway, also took part in this presentation.

Tribute to Colonel Bennion

In a moving recitation of the many outstanding events in the life of Colonel Bennion, Louis V. Sutton, President of the Carolina Power & Light Co., reviewed the numerous accomplishments of this man who was destined to be of such great service to the electric utility industry. Speaking for the industry, Mr. Sutton paid tribute to Colonel Bennion for the 30 years in which he served the industry with integrity, devotion, and great distinction.

At the conclusion of his address, Mr. Sutton unveiled a large oil portrait of Colonel Bennion, painted by the noted artist Thomas E. Stephens. As Mr. Sutton noted when he unveiled it, "This portrait will hang in the

New Members of the EEI Board of Directors

R. P. BRIGGS
Executive Vice President
Consumers Power Co.

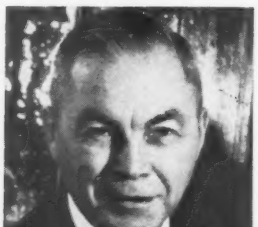
H. J. CADWELL
President, Western Massachusetts Electric Co.

STUART COOPER
Chairman of the Board,
Delaware Power & Light Co.

CARL J. FORSBERG
President, Wisconsin Power & Light Co.

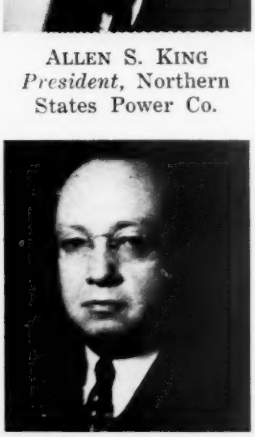
ALLEN S. KING
President, Northern States Power Co.

C. E. KOHLHEPP
President, Jersey Central Power & Light Co.

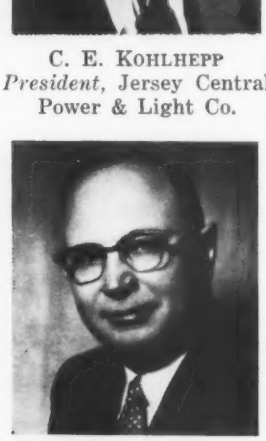


C. R. LANDRIGAN
Executive Vice President
The Detroit Edison Co.

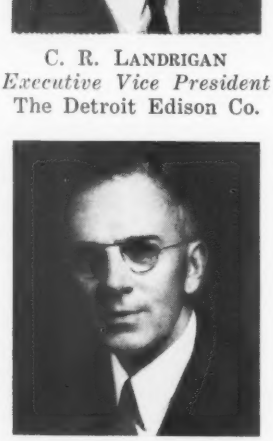
J. E. LOISEAU
President, Public Service Co. of Colorado



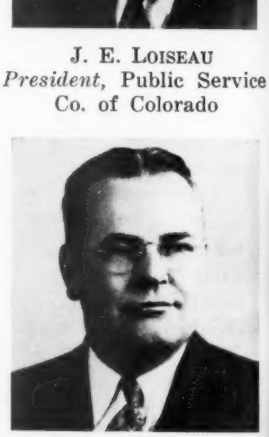
EARLE J. MACHOLD
President, Niagara Mohawk Power Corp.



D. C. MCKEE
President, The Empire District Electric Co.



P. H. POWERS
President
West Penn Power Co.



R. G. RINCLIFFE
President
Philadelphia Electric Co.

R. E. RITCHIE
President, Arkansas Power & Light Co.

W. H. SAMMIS
President
Ohio Edison Co.

J. R. WELSH
President, Southwestern Gas & Electric Co.

ERWIN H. WILL
President, Virginia Electric & Power Co.

Philip Sporn (right), President of American Gas and Electric Co., accepts the Reddy Kilowatt Annual Report Award for his company from Ashton B. Collins (center) of Reddy Kilowatt, Inc., as George Ousler, Chairman of the EEI Awards Committee and Vice President of Duquesne Light Co., watches.

Board of Directors' room of the Edison Electric Institute as an everlasting reminder of our deep obligations to him and as an inspiration to all who in the years to come may have any responsibility for the conduct of the nation's electric utilities."

At their meeting earlier, the Board of Directors presented to Colonel Bennion a silver tray inscribed with the signatures of all of the Board members, a silver pitcher, and a purse as a token of their appreciation and esteem.

Election of Officers

Donald S. Kennedy, Chairman of the Board and President of the Oklahoma Gas and Electric Co., was elected President of the Institute, succeeding Mr. Branch. He was installed as the new EEI chief executive at the last session on Wednesday afternoon. Mr. Kennedy led the delegates in a vote of appreciation for the dynamic and inspiring leadership which Mr. Branch provided the association, and the industry in general, throughout the past year. He also reminded delegates again of the great debt which the industry owes Colonel Bennion for his great leadership and wise counsel through more than 30 years of tremendous development and growth of the industry.

J. W. McAfee, President of the Union Electric Co. of Missouri, was elected EEI Vice President, and Harold S. Sutton, Treasurer of Consolidated Edison Co. of New York, Inc., was re-elected Treasurer of the Institute. Sixteen member company executives were named to the Board of Directors. Edwin Vennard, Vice President, was elected Vice President and Managing Director, and A. B. Morgan was re-elected Secretary and Assistant Managing Director.

Prize Awards

The presentation of the Reddy Kilowatt Annual Report Award was made at the Tuesday afternoon session. G. W. Ousler, Vice President of Duquesne Light Co. and Chairman of the

(Left to right) Ashton B. Collins of Reddy Kilowatt, Inc., presents Honorable Mention Certificates as recognition in the Reddy Kilowatt Annual Report Award competition to the following company representatives: Fred Dettmar, The Dayton Power and Light Co.; George R. Conover, Philadelphia Electric Co.; M. L. Kapp, Interstate Power Co., and Douglas Anderson, Nova Scotia Light and Power Co., Ltd.

Remarks of Donald S. Kennedy in Accepting Presidency of Edison Electric Institute

TO take a place along with the able and illustrious men who have served this organization as president is a signal honor for which I shall always be most grateful. As is invariably the case, with honor will come heavy responsibility. Were it not for the experienced Advisory Committee, the strong Board of Directors, the enthusiastic committees, and the devoted staff, I would have great reluctance in accepting this post. Since all of these elements of a successful administration are present, it is with a feeling of confidence that I say—thank you for the opportunity to serve the great industry this year.

In assuming this position, it is certainly appropriate and altogether fitting for me to join in another reminder of how much we owe Colonel Bennion. From an unfavorable position industrywise almost a quarter of a century ago, he has helped to guide the EEI and the electrical industry upward through many difficult years to new heights. The impact of his leadership and counsel will outlive all of us here today.

> The theme of our convention—Tell our Story—Go Forward—Clearing and Widening the Expressways of Power—For America—

is certainly worth repeating now and through the coming year. These are important days—a national election year will certainly provide left-wing elements of both political parties the opportunity for demagogic speeches on political electric power. Socialistic-minded column writers and broadcasters will be purveying their half truths. There will be propaganda too that Russia is outstripping us in the air and under the sea. But isn't it reassuring that no one has even suggested that we are losing ground to Russia or anyone else in the production of electricity? Accurate comparisons are difficult to obtain but some recent ones give the United States an output of three times that of U.S.S.R. and further that the average amount of power per workman is about five times that of Russia.

We must make and then use to the best advantage opportunities to tell our story—the saga of the investor-owned electric industry. There is no finer industrial history.

The story of our accomplishments is so well known to this group that there is no reason to repeat it.

Even though our industry is more united than at any time in our history, we need even more teamwork by the four national organizations which represent us.

Although almost every one of us can be proud of our output charts and know that we are doing a good job in our own individual service areas, we do not and cannot rest in this satisfaction. To "tell our story and go forward" we can never be smug or content to rest where we are, in having dependable electric power when needed and where needed and priced low. This is our best answer to political power advocates.

Political development of Niagara or of Hells Canyon geographically may be far from almost all of us. However, political electric power from the atom with its tax dodgers of "preference" can be a crash program in *any* area. Just as the problems of the United States have become world wide, so have the problems of our great industry become nation wide. We need to utilize every available legitimate tool to successfully cope with our national problems.

It is my hope that each one here today and others in the industry will resolve to give at least a little more time next year to the national problems of the great electrical industry.

We can then in fact follow our convention theme by "Telling our Story — Going Forward — Clearing and Widening the Expressways of Power for America."

And now after one-third of a century in the electric utility business, my heartfelt thanks for the opportunity to know all of you better and to serve it even more.

Institute's Awards Committee, conducted the ceremonies. The Reddy Kilowatt Annual Report Top Award was won this year by the American Gas and Electric Co. Philip Sporn, President, accepted the Award for his company. The company was commended by the judges for taking "full advantage of the report as a platform to inform the public about important company trends." The citation also mentioned the "good job on selling the territory and the service area" done by the report.

Four other companies which received Certificates of Honorable Mention were Philadelphia Electric Co., The Dayton Power and Light Co., Interstate Power Co., and Nova Scotia Light & Power Co. The presentations were made by Ashton B. Collins, Director of Reddy Kilowatt, Inc., sponsor of the awards.

Special Events

By far the outstanding social event of the Convention was the reception in honor of Colonel and Mrs. Bennion on Monday evening in the Carolina Room of the Chalfonte Hotel. The guests of honor greeted hundreds upon hundreds of their friends and associates in the industry who gathered to extend best wishes to the Bennions.

The Institute was host to the ladies on Tuesday afternoon, beginning with a luncheon at the Claridge Hotel. Next came some amusing dramatic monologues by Cornelia Otis Skinner in her inimitable style. This was followed by a fashion show presented by Henri

(Continued on page 204)

McAfee Elected Vice President of EEI; Vennard Begins Service as Managing Director

J. W. McAFEE

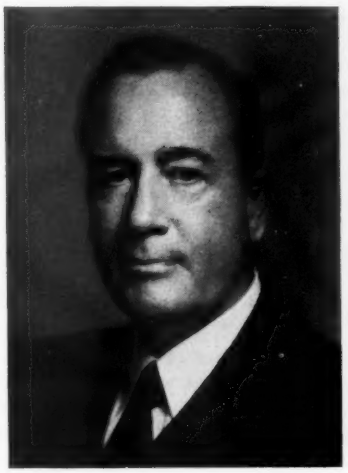
J. W. McAFEE, President of the Union Electric Co. of Missouri, St. Louis, Mo., was elected Vice President of the Edison Electric Institute at the 24th Annual Convention in Atlantic City. He will hold office for one year, succeeding Donald S. Kennedy, who has been named President of the Institute.

Mr. McAfee was born in Oklahoma City, Okla., on August 12, 1902, the son of Thomas and Anna Lee Lineberry McAfee. He grew up in Brookfield, Mo. He attended Lake Forest Academy, Lake Forest, Ill., and was graduated from the University of Missouri Law School in 1926. That same year, he was admitted to the Missouri Bar and became a member of the law firm of Holland, Lashley & Donnell in St. Louis.

From 1933 to 1935 he served as a special tax counsel for the City of St. Louis. He was elected judge of the circuit court in St. Louis and served until 1937, at which time he re-entered private law practice with the firm of Igoe, Carroll, Keefe & McAfee.

On December 6, 1941, he was elected president of the Union Electric Co. of Missouri, which position he has held during the ensuing years. From October 4, 1951, to February 11, 1955, Mr. McAfee served as president of the North American Co. of New York, the company which for many years owned the common stock of Union Electric. The North American Co. was dissolved on February 11, 1955, and all its 45,000 stockholders now are the direct owners of Union Electric. He also is a director of Electric Energy, Inc., which was formed by Union Electric and four other companies in 1950 to build the 1,000,000-kw power plant to supply half of the electricity for the atomic energy project near Paducah, Ky.

Active in the civil and cultural life of his community, Mr. McAfee is on the governing boards of the St. Louis Council of Boy Scouts of America, St. Louis Municipal Opera Association, Washington University, Barnes Hospital, and the Automobile Club of Missouri. He is a member of the American, Missouri, and St. Louis Bar Associations.



EDWIN VENNARD

EDWIN VENNARD has assumed the duties of Vice President and Managing Director of Edison Electric Institute, succeeding Colonel Howard S. Bennion, who retired on June 1st. Mr. Vennard has served as Vice President of the Institute since March 1st of this year.

One of the most widely known executives in the electric utility industry, Mr. Vennard has become a leading consultant on public utility economics, rates, new business development and public relations. A frequent speaker on these subjects, he has received honor awards from Freedoms Foundation for two of his addresses. He has also been co-author of a high school text, *The American Economic System*, which has won four honor awards from Freedoms Foundation.

Mr. Vennard has taken an active part in the Institute's activities for many years, having served on their Rate Research Committee and as chairman of the Commercial Division, the Modern Kitchen Bureau, and the Sales Executives Conference. He has also cooperated with the Electric Companies Advertising Program, the Electric Companies Public Information Program, the Association of Edison Illuminating Companies, and the Industry Committee of the American Power Conference.

Born in New Orleans, Mr. Vennard studied at Tulane University under an honorary scholarship, and was awarded a Bachelor of Engineering degree in mechanical and electrical engineering in 1924. After graduation he joined the Test Department of the General Electric Co. in Schenectady. In 1925 he went with Gulf States Utilities Co. in Lake Charles, La., as a power sales engineer. The following year he accepted a similar position with the Southwestern Gas & Electric Co. in Shreveport. Promoted to general commercial manager in 1928, he was responsible for sales, rates and several other phases of the company's business.

In 1933 Mr. Vennard began a 20-year association with the Middle West Utilities Co. when he joined that firm as head of the Rate Department. In addition to rates, he was in charge of economic studies, interconnections, and power pools. Elected a vice president of Middle West Service Co., the successor company, in 1937, his re-

(Continued on page 177)

Report of the EEI Committee on Atomic Power Adopted by the Board of Directors, June 6

THE United States is supreme among all nations in the development and use of electric energy. The electric power industry has been, is, and will continue to be, forward looking in enlarging the supply of efficient, low-cost electric energy for the continuing benefit of all the millions of power users throughout our land. The record of progress in the use of fossil fuels gives proof of the creative ability of industry as well as the constant will to do a good job better.

Atomic power is now an accepted fact. Substantial progress in its development has been made. Further development is a challenge the electric power industry welcomes. Advance into the unknown is a characteristic of American industry, which has risked so much and gained so much for all America since Edison opened his Pearl Street Station.

Present Participation

The member companies of the EEI have spent, and are continuing to spend, millions of dollars to develop economic nuclear power. A total of 44 investor-owned companies are singly or in groups participating in the planning and building of nuclear power plants. More than 300 million free enterprise dollars are involved in the planning, construction, and attendant research for these plants, which together will have an ultimate capacity in excess of 1,100,000 kilowatts. A total of 113 utility companies are active in the atomic power field and have AEC access permits.

At its meetings on June 5th and 6th the Committee on Atomic Power reviewed current activities in the field of atomic power, including the investigation of various reactors, the development of new reactor prototypes, and the carrying out of programs of design, construction, and operation of large-scale reactors under the Power Reactor Demonstration Program of the Atomic Energy Commission and through straight license applications. The Committee is of the opinion that the present reactor program with the United States, in which members of the industry are playing such a leading part, is a most impressive one from the standpoint of variety, depth, and scope.

AEC Five-Year Plan

In its original Five-Year Power Reactor Development Program, the AEC selected five reactor concepts as being technically feasible and potentially capable of producing economically competitive nuclear power. Companies, individually or in groups, have announced their intent to build large-scale plants embodying four of these designs, and actions toward this objective are proceeding in an orderly manner. The fifth concept is the basis for a large-scale construction project by a public power district.

Since the original Five-Year Program was established, the AEC has added two new reactor designs. AEC has announced that it has signed a contract with a reactor manufacturer for building a prototype of one of these and that it is negotiating with another manufacturer for a similar undertaking for the other. *As these and other promising designs or variations pass the prototype stage, the industry will again take major responsibility for their large-scale development with private capital. Past experience clearly supports this.*

Free Enterprise Basic

The Committee on Atomic Power believes it is important to point out that in the development of conventional electric power the unique genius of the American economy under free enterprise has given the United States undisputed world leadership in electric power production over many decades, utilizing every available energy source. The committee urges the industry membership to re-emphasize as a basic program its determination to carry out the same kind of development in atomic power. This will assure our continuing leadership in production of power by nuclear means and will make available to the people of the United States and its allies the benefits of such leadership.

Committee Recommendations

In order to insure that there will be no basis for doubt as to whether every variety of reactor that should be undertaken, either in prototype, or in large-scale project, is being undertaken, the Committee on Atomic Power is recommending the program set forth in the following resolutions adopted at its meetings on June 5th and 6th:

1. Resolved that the Committee on Atomic Power recommend that the Board of Directors of EEI establish immediately and on a continuing basis Technical Appraisal Task Force on Atomic Power Reactors for the purpose of reviewing various reactor types and designs and recommending to the member companies of the EEI those reactor types and designs which appear to have promise of feasibility for the production of electric power.

The Committee on Atomic Power recommends that the Technical Appraisal Task Force on Atomic Power Reactors consist of independent nuclear engineers and scientists and executives of EEI member companies and equipment manufacturing companies. The Atomic Power Committee further recommends that an adequate sum of money be appropriated each year to finance the workings of the Technical Appraisal Task Force on Atomic Power Reactors on a continuing, long-term basis.

The Committee on Atomic Power considers that such a Technical Appraisal Task Force should be available not only to serve the members of the Institute directly, but also to act as a liaison agency with the members of any evaluation group that may be set up at the national level.

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Confidence Regained

By Harllee Branch, Jr.

President, Edison Electric Institute, and
President, Georgia Power Company

An address before the Twenty-Fourth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 4, 1956

THIS is the first general and nation-wide meeting of representatives of the electric industry and related businesses since we were together in Los Angeles last June. While industry problems and challenges have been discussed at meetings of NAEC, AEIC, ECAP, PIP, the EEI committees, and state and regional associations and their technical sections during the past year, none has involved such a large and representative group of industry leaders as is assembled here. It is appropriate, therefore, at the outset of this meeting that we spend a few minutes "taking stock"—reviewing what has happened to our industry during the last 12 months and why.

Great events have marched across the pages of our industry's history book since last June. While it is risky business to attempt an evaluation of these events so close to their occurrence, nevertheless I believe it will be recorded in the chronicles of our time that this was the year in which our industry achieved not only a new measure of public esteem but of self-confidence, as well.

Progress Toward Goals

A year ago, in accepting the presidency of the Institute, and speaking as your representative, I said that we would endeavor to promote within and without our membership a better understanding of the industry's basic interests and concerns—that we would protect with all possible vigor the principles of American free enterprise upon which our industry is founded and upon which its survival depends—and that, as a concomitant of that determination, we would oppose, at every opportunity, those within and without government who would socialize our industry.

You have delivered magnificently on the platform to which I presumed to commit you. As a result, I think we have made substantal progress toward

HARLLEE BRANCH, JR.

achieving that clarity of objective and that unity of purpose so essential to an effective defense of the rights of the 80 per cent of American power users who depend upon our companies for electric service.

It will strike you as strange, perhaps, that I should speak of increased self-confidence and enhanced public support for our industry in the face of recent, admitted setbacks in Washington—setbacks such as the Senate's vote in favor of a State power development at Niagara; the tacit approval of TVA expansion through the use of power revenues without advance Congressional approval; the Attorney General's opinion giving subsidized power groups virtual monopoly rights to Clark Hill and other Federally-generated power; the postponement, because of Congressional intervention and pressure, of sound marketing and rate criteria for the sale of government power in the Southwest, etc.

These are setbacks—serious setbacks—that pose real threats for our customers and investors and the public generally. I would be the last to minimize or gloss over them. But I have the feeling that they are but lingering shadows in a gradually brightening outlook for our industry and the great majority of Americans we serve.

Upon what is this optimism based?

I will tell you—and, in doing so, I will recount what I consider to have been the most significant developments of the past year insofar as the independent, business-managed and taxpaying electric utilities are concerned. I shall speak not only of the favorable events which have transpired but of the unfavorable events which failed to come off as our opponents intended. I shall speak not only of tangible achievements but of intangibles also—intangibles such as changed attitudes on the part of the public and our own members—attitudes which may be more meaningful for the future than anything, favorable or unfavorable, which actually occurred during the year.

New Spirit of Conviction

In the first place, I am optimistic because of what I have seen and heard as I have traveled across the nation, visiting electric companies and talking with their executives, employees, and customers. Make no mistake about it—a *new* spirit is beginning to move our industry! It is a spirit of conviction, and of courage, and of cohesiveness too often lacking in earlier years when unwarranted political attacks have been loosed against us. All over America electric utility executives and employees have shown an increasing willingness to stand up to the Socialists and demagogues, and to talk back to cynical and self-serving politicians—answering fraud with fact—boldly, and without fear or apology, demanding equality and fair play for their customers and investors.

This new spirit was manifested in the challenge you hurled at the Chudoff committee—a challenge to be heard which, being refused by the committee, resulted in a complete loss of public confidence for its politically-inspired findings.

It was manifested also in your vigorous defense of the Dixon-Yates contract—a defense which, despite abandonment and timid repudiation of the contract, nevertheless served to alert the public as never before to the heavy cost of government power to the taxpayers and the rank discrimination involved in the Federal financing of power facilities for a favored group, state, or region.

It was manifested also in your ready and enthusiastic acceptance of invitations to testify (a) in opposition to revenue-bond financing for TVA based upon an evasion of Congressional controls and offering as an inducement to investors a "windfall" of past Federal appropriations aggregating not less than $1,700,000,000; (b) in support of Revenue Act revisions aimed at relieving, to some extent, the inequalities and discriminations which have made "second class" citizens of electric utility customers and investors; (c) in opposition to the Gore bill for a "crash" program of atomic power plants to be build by the government at large and useless expense to the taxpayers and under preference provisions in the Atomic Energy Act which would discriminate against them and in favor of the customers of subsidized-power groups; (d) in support of the Potter-Pastore bill aimed at eliminating regulatory barriers which now inhibit joint construction of generating plants (both atomic and conventional) by utility companies—particularly the smaller companies—so as to assure a power supply for their customers at minimum cost and with maximum efficiency; and in connection with a variety of other legislative matters.

Appearances Before Committees

Never before have so many of the top leaders of our industry been so ready to join in telling the industry's story to Congressional committees—even in cases where their own companies were not directly involved. This attitude, plus the poise and logic of those who testified, won new respect for our industry from members of the Congress. It provided the public with information of the sort necessary to sound democratic judgements. Best of all, it gave the professional advocates of governmentalized electric power their first real challenge in many years. It was a demonstration of industry-wide responsibility and forthrightness which if continued, as I am confident it will be, will assure the reversal of a 25-year trend toward the socialization of our industry.

Voters Prefer Private Power

I am optimistic also because of the overwhelming voter preference for the service of independent electric companies rather than of subsidized power organizations as expressed in numerous local elections during the past year, such as the one about a month ago in Oregon which resulted in the sale of co-op facilities to Portland General Electric, and earlier elections in Stevens County, Washington; Lake City, Florida; Anson, Texas; Dublin, Georgia; Newton, Mississippi, and elsewhere. So far as I have been able to determine, only one new municipal power system has been established this year. Nine have been discontinued, and eight have been sold to electric companies. This brings the number of municipally-owned systems to its lowest level since 1939.

Our industry's only serious setbacks in recent months have been at the hands of Washington legislators and officials who, being out of touch with the sentiments of the rank-and-file voters as reflected in the recent elections to which I have referred, have been pressured into supporting socialistic power measures by self-seeking minority groups.

Niagara Vote

The recent Niagara vote is an eloquent example of what I mean. There the Senate, by a narrow majority of only nine votes, under the whip of party leaders, directed state development of a power project which residents of the affected area, in repeated surveys and in resolutions of farm, labor, business, and civic organizations, had asked to be developed by free enterprise electric companies.

I am optimistic because I know that, if America continues as a democracy, the sentiments of an informed and alerted people, rather than of demagogues and privilege seeking pressure groups, ultimately will prevail. In this connection, I am optimistic because our industry has begun, in its advertising and publicity campaigns, to tell the people exactly what government power involves—in terms of their own pocketbooks and their own economic opportunities—and in plain and unequivocal language that the man in the street, and on the farm, and in the factory can understand.

As a result of plain talk—branding "preference" and tax subsidies as the un-American devices they really are—we have begun to attract support from some unexpected quarters. I am sure you noted, as I did, that Adlai Stevenson, in the course of his recent Oregon campaign, declared himself in favor of the basic "partnership" idea of Federal and private collaboration in resource development.

And only a few days ago, the New York *Times*, long an advocate of TVA, editorially declared its opposition to the so-called "preference" clause because, as that newspaper observed, it inequitably limits the benefits of low-priced electricity to the relatively few customers served by publicly-owned utility systems, and also constitutes "a built-in and almost irresistible temptation to villages, towns and cities * * * to set themselves up in the power business," thereby doing grave damage to private utility companies "by stealing away their customers."

Former Governor Thomas E. Dewey has also been reported in recent dispatches as being opposed to the grant of special privileges in Niagara power to subsidized power organization.

Political Importance Diminishes

I am optimistic also because of the apparently diminishing interest in, and willingness of politicians to rely upon, the so-called "public-versus-private" power issue in national and local elections. If you will glance back over last autumn's newspapers, you will find that almost all of the political pundits and columnists were predicting that government power would be one of the top issues in the 1956 elections. Today it is rarely listed as an issue of any importance at all. On television from Florida a couple of weeks ago, two top Democratic presidential aspirants—one of them just defeated in Oregon where he loudly espoused government power — completely omitted this from their list of '56 campaign issues. In a national magazine, issued the same week, the Chairman of the Republican National Committee taunted the Democrats to submit the "Dixon-Yates" controversy to the voters of the nation.

I do not mean to suggest that government power will not be mentioned in the coming campaigns—for the Morses, the Kefauvers, the Gores, and the Langers naturally will not drop that issue—but I do mean to say that a better-informed public in most sec-

tions of the nation will be little moved by it. And that, I think, is a vastly significant fact for the future!

I am optimistic also because of the impressive number of citations received during the past year by electric companies and their executives from their own home-folks as well as state and national bodies interested in matters such as area and regional development, soil and water conservation, and the like.

Time does not permit a complete listing of such awards, but I have in mind, for example, the standing ovation given Sherman Knapp, President of The Connecticut Light and Power Co., when he presented the report and recommendations of the Connecticut Flood Recovery Committee to the General Assembly of his state; the award given to Philip A. Fleger, Chairman of the Board of the Duquesne Light Co., for "Outstanding Leadership in the Field of Management" by students of Duquesne University; the "Golden Deeds" award presented by the Beaumont Exchange Club to Roy S. Nelson, President of Gulf States Utilities, in recognition of his energetic and unselfish efforts in behalf of community service, health, welfare, and charity programs; the Freedoms Foundation Award given to the Florida Power and Light Co. for its outstanding work in promoting public understanding of our American traditions; and the selection of Walter T. Lucking, President of Arizona Public Service, as "Engineer of the Year" by the Arizona Engineering Societies for his services to his profession and community.

I am optimistic also because our member companies during the past year have shown that they — even better than government—can do the really *big* jobs for a power-hungry America.

Great Engineering Accomplishment

One of the greatest engineering accomplishments of all times was the recent completion of the Clifty Creek plant by the Ohio Valley Electric Corp. —well ahead of schedule and considerably under original cost estimates. Clifty Creek is the largest investor-owned electric power plant in the world. It and its companion plant, Kyger Creek, have a capacity of 2,365,000 kilowatts and were constructed at a cost of $385 million *in only three years' time*. The two plants are linked by a 330,000-volt transmission network to the Portsmouth, Ohio, project of the Atomic Energy Commission and will supply power to that facility under the biggest electric contract ever negotiated.

The Alabama Power Co. has applied to the Federal Power Commission for a license to complete one of the most comprehensive improvement programs in American history. The company plans to fully develop the great Coosa River by the construction on that waterway of four additional hydroelectric plants and the enlargement of an existing plant—at a cost in excess of $100 million. The company also proposes to build two new hydroelectric projects on Alabama's famous Warrior River.

The Idaho Power Co. is proceeding rapidly with its development of a gigantic three-dam project on the Snake River despite continued political sniping by advocates of socialized power; and a group of northwestern companies proposes further development of the Snake below Hell's Canyon.

On May 1, the American Gas and Electric System announced the proposed construction of two 450,000-kilowatt steam-electric generating units, the largest ever undertaken in the history of the electric power industry. These two units will embody the most advanced engineering concepts and will achieve a higher degree of efficiency than has ever been reached before.

Atomic Power Development

Of especial significance at this time are our industry's plans for developing atomic power plants. Within the past month the Atomic Energy Commission has authorized The Consolidated Edison Company of New York, Inc., to proceed with a 236,000-kilowatt plant costing $55 million, and Commonwealth Edison Company, of Chicago, to construct a 185,000-kilowatt plant at a cost of $45 million. The two plants are to be completed in the fall of 1960.

Forty-four electric companies are participating individually or in groups in the planning of seven large and medium size atomic reactor plants as well as two small plants. These plants will have a generating capacity in excess of a million kilowatts and will represent an investment of about 300 million free-enterprise dollars.

Ninety-five companies, in 13 groups, are engaged in atomic power study programs with access permits already issued to 113 companies. Associated with our industry in this impressive effort are many manufacturing, engineering, and research organizations.

This is a gratifying record of achievement in view of the fact that only within the past two years has the Atomic Energy Act permitted utility companies to participate in such programs. It demonstrates that the so-called "crash" program, calling for six Federal atomic power plants to be immediately constructed in various parts of the country, is unnecessary and undesirable and probably would only serve to retard American atomic progress by diverting the nation's total productive facilities, equipped to produce nuclear power reactors, to the government's program.

Cheaper and More Efficient Service

Most of all I am optimistic because our industry has continued its ceaseless search for ways to serve the ordinary American public with electricity cheaper and more efficiently than ever before.

The foundation stone of our industry is good service at reasonable rates. Without this foundation the whole structure of our public and governmental relations would collapse like a house of cards. You have not only met the nation's soaring demands for energy and capacity during the past year but you have maintained an adequate reserve. You have projected the ever-growing demands for electric power into the future and have made your plans for supplying these demands years in advance. You have been able to obtain the enormous capital funds required for your expansion programs, in the open market, in competition with other and unregulated industries likewise bidding for the investor's dollar.

Through increased efficiency in the use of fuel and through the greater use of automation in your generating plants, substations, billing offices, and other operations, you have kept the average price of electricity at a level lower than it was ten, 15, and 20 years ago before inflation had driven up the cost of virtually every other commodity and service, including particularly the cost of government. That our industry has been able to hold its price line so effectively is a marvelous tribute to your alertness as managers, to the skill of your technical men and the vision of your research activities.

Through its HOUSEPOWER, "Live

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The Washington Water Power Co. Wins Charles A. Coffin Award for Third Time

THE Washington Water Power Co. has received the electric industry's highest annual honorary symbol of achievement, the Charles A. Coffin Award. Presented to the company's president, Kinsey M. Robinson, at the Annual Convention of the Edison Electric Institute, the Award carried unique distinction both to the company and to Mr. Robinson.

It was the third time the Award had been won by the Washington company. The company received it first in 1940, two years after Mr. Robinson became President, and again in 1950. In 1936, it was won by the Idaho Power Co., when Mr. Robinson was president of that company.

The Washington Water Power Co. was selected as recipient of the Coffin Award after a nominating panel, representing every section of the nation, had reviewed the accomplishments of electric operating companies in 1955 and nominated five for consideration by a Committee of Judges. The judges were Dr. James R. Killian, President, Massachusetts Institute of Technology; C. W. Kellogg, Past President, Edison Electric Institute, and Harllee Branch, Jr., President, Edison Electric Institute.

Judges' Citation

The judges, in the words of their citation, based their decision on the "extraordinary and enlightened leadership" displayed by the Washington company "in a struggle for survival of free enterprise in the electric industry." This occurred "in a section of America where huge Federal government expenditures had been and were being made for the production and transmission of electric power, a section in which for many years strong sentiment for socialization of the power industry had been prevalent and in which discriminatory statutes and regulations had placed destructive power in the hands of opponents of free enterprise." And more specifically, "for winning and holding, in the face of this powerful opposition, the friendship and good will of its customers and other people of the area as dramatically illustrated by an overwhelming vote in favor of private ownership in Stevens County, Washington."

Presented annually in recognition of outstanding achievements by electric companies, the Coffin Award was established in 1922, as a tribute to the memory of the late Charles A. Coffin, founder of the General Electric Co.

Consisting of a gold medal for the winning company, and $1,000 for the employees' benefit fund, the Coffin Award has acquired national prominence in the public mind as well as in the industry for its significance as an acclamation for conscientious service and progressive development.

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Ralph J. Cordiner (left), President of General Electric Co., donor of the Charles A. Coffin Award, presents the award to Kinsey M. Robinson (right), President of The Washington Water Power Co., which was named this year's winning company. EEI President Harllee Branch, Jr., who presided at the ceremonies, watches presentation.

CHARLES A. COFFIN MEDAL
1952
FOR DISTINGUISHED CONTRIBUTION
TO THE DEVELOPMENT OF ELECTRIC
LIGHT AND POWER FOR THE CONVEN
IENCE OF THE PUBLIC AND THE
BENEFIT OF THE INDUSTRY

We Honor a Leader in Our Industry

By Louis V. Sutton
President, Carolina Power & Light Company

An address before the Twenty-Fourth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 5, 1956

NO more pleasing task has ever befallen me than the one with which I am honored today. Although conscious of my inadequacy, it is my happy privilege to serve as your spokesman in paying tribute to a man who for 30 years has served the electric utility industry of the nation with unparalleled distinction and effectiveness and who by his sterling character and extraordinary capabilities has won and retained the warm affections and the unstinted admirations of all of us.

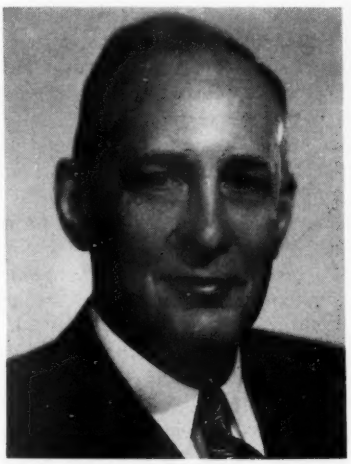
It was a fortunate day for our industry when Howard Sharp Bennion accepted in 1926 the position of Director of Engineering of the National Electric Light Association. That choice started a long association that now comes to an end through his retirement and that has been of inestimable benefit to the nation and to those of us who direct and operate its electric utilities.

Colonel Bennion was no untried, unknown quantity when he joined the staff of the National Electric Light Association three decades ago. His relatively brief life up to that time had been an uninterrupted succession of outstanding achievements that fore-shadowed the great accomplishments in the eventful years that were to follow.

Born of sturdy frontier stock in Utah, reared in the disciplines of life on a Western farm, and nurtured in the self-reliant religious faith of his parents, he attracted the attention of the late Senator Reed Smoot by the brilliant and prophetic record which he made in high school. Literally importuned to accept congressional appointment to West Point, he enterd that institution in 1908.

Graduated at Head of Class

At the Academy, young Bennion made a record that still ranks him scholastically among the top graduates in the long history of that academically rigorous institution. He shares that extraordinary distinction with General Robert E. Lee and General Douglas MacArthur among others. Of course, he graduated at the head of his class, a class incidentally that furnished many of the most eminent military leaders of two world wars.



LOUIS V. SUTTON

It is interesting and revealing to recall the judgment which his fellow students placed upon him. In the 1912 "Howitzer," the Academy yearbook, there appears this tribute which despite the light touch of youth speaks volumes for the admiration which he won from his fellow-students: "Some men are born bright, others achieve brightness, and still others have brightness thrust upon them. Bennion suffers all three and, in consequence, has always been a 'Star'." I might add parenthetically that in the bright lexicon of West Point cadets, a "Star" is one who ranks unmistakably in the upper two or three per cent of his class. More significant still and more prophetic still is this further praise: "In the section room, it is an education just to watch him—and yet how quiet and unassuming is the man from the Sagebrush of Utah."

Not content with the knowledge and mental training which he had received at the Academy, he enrolled in the School of Army Engineers from which he was graduated in 1915, again at the head of his class. He was selected to pursue electrical engineering further at Cornell University but he declined, preferring active military life and feeling that such additional studies would probably lead to his assignment as an instructor at the Army Engineers School.

During the Mexican border troubles, Lieutenant Bennion spent six months on military duty in Texas and then was ordered to the Philippine Islands where he served first as assistant and later as head of the Military Survey in Luzon. Recalled to the United States upon our entry into the First World War, he was placed in command of a company of the 2nd Engineer Regiment. Within a short time he became the commanding officer of the 1st Battalion of that regiment and led this unit to Europe in August, 1917.

Directed Camouflage Section

Upon arrival in France he was selected at the unbelievably youthful age of 28 to organize, develop, and direct the newly organized Camouflage Service. Today we take for granted the infinite uses of camouflage in concealing troop movements and vital objectives from the knowledge and destructive attention of the enemy. Then camouflage was in its infancy and Colonel Bennion's duties called for imagination, resourcefulness, and technical abilities of the highest order.

How competently he did the pioneering work assigned to him is attested by the customarily restrained language of his citation for the Distinguished Service Medal:

> "Howard S. Bennion, Major, then Lieutenant Colonel, Corps of Engineers, United States Army. For exceptionally meritorious and distinguished services. As Chief Camouflage Officer, American Expeditionary Forces, from October 1917 until February 1919, in a position of great responsibility, he rendered conspicuous service in an entirely new field of endeavor. By his tireless energy, sound judgment, and marked technical skill he organized and placed the work of the

camouflage section on a practical and highly efficient basis and directed its functions in a most satisfactory manner, thereby contributing materially to the success of the American Expeditionary Forces."

To make complete the record of his amazing service it should be added that during his association with the Camouflage Service he wrote three manuals on the technique of this truly revolutionary phase of military practices. Despite the vast developments of military science since 1918, many of the principles of camouflage which he developed and promulgated are still accepted as basic.

Engineering Assignment

Upon his return to the United States in 1919, Colonel Bennion was assigned to the Office of Chief of Engineers in Washington, performing many services of increasing responsibilities with great efficiency.

May I interrupt the recital of Colonel's more material accomplishments to mention an event which took place in 1920 and which had a profound and altogether happy effect on his future life? In September of that year, he married Miss Marian Cannon of Salt Lake City. Gifted with unusual personal charm and with an uncommonly perceptive intelligence, she shares devoutly his religious faith and has been a helpmeet in every sense of that meaningful word. The Colonel placed obliquely but accurately the correct estimate on his own good fortune when he once observed: "A man rarely remains or rises above the standards set by his wife." What he laid down as a general principle, he has illustrated and illumined by his own life.

Duty With FPC

In the latter part of 1920, Colonel Bennion was assigned by the War Department to duty with the newly organized but tremendously important Federal Power Commission. In this new position he was charged with the responsibility of administering the enginering functions of the Commission as outlined in the creating statute. In 1924, he was appointed District Engineer of the Fourth Mississippi River District, busying himself for two years in levee construction and in improvement of the New Orleans harbor.

Joins Electric Power Industry

In September, 1926, Colonel Bennion entered the service of the electric power industry by becoming Director of Engineering of the National Electric Light Association. In releasing him for this service, the War Department stipulated that one week in every five of his busy life was to be devoted to the preparation of important reports on which he was working at the time of his assignment. Completing these reports, he resigned from the Army 18 months later, ending a wholly delightful association that had begun in 1908 when he entered the United States Military Academy, that had brought him steady advancement and the esteem of his superiors, and that would undoubtedly have been climaxed by unusual military fame.

I have been at some pains to recount the various stages in Colonel Bennion's military career because I wish all of us to recall what manner of man it was who placed his great talents for leadership at our service 30 years ago. Despite his youth, he was already a man of proven capacity and of brilliant promise. He was no fledgeling of uncertain future. He was by every manner of reckoning one of the ablest men in the nation's service.

Responsibilities With EEI

When the Edison Electric Institute was founded in 1933, the Colonel was appointed Assistant General Manager. Later he became Assistant Managing Director and still later, Vice-President and Managing Director. It is from this latter position that he retires now with our heartfelt appreciations and with our ardent hopes that good health and great happiness will attend him in the leisure which he has so richly earned.

I do not propose to elaborate at any great length upon the truly incalculable services which Colonel Bennion has rendered to the great industry of which we are parts. You are familiar with the massive contributions which he has made to the advancement and the good name of the business in which we are spending our lives. There is one incident in his long associations with the Edison Electric Institute which I do wish to mention and to italicize. It is so typical of the man.

When the United States entered World War II, the Colonel was confronted with a vital decision. He had spent 20 years of his crowded life in the military service. He could have easily and swiftly stepped into a post of the highest responsibility. Those of us who know him, know full well that he would have won certain fame at a time when military glory was almost irresistibly tempting.

Elects to Stay at Post

With his characteristic honesty, Colonel Bennion elected to find his place at a time of great national peril in the post where he was. He reasoned that an unfailing supply of electric power was vital to the national war effort and that he could best serve his country by expending his seemingly inexhaustible energies and his extraordinary abilities in making certain that the production of the electric utility industry was always adequate to the nation's unprecedented needs. The decision which he made was not easy for him, but in making it, he served his country well and paid our industry one of the most moving compliments which it has ever received at the hands of any man. It made all of us proud that we were parts and parcels of a business that had won such reasoning allegiance from a man of his vision, his military training and unlimited promise. Suffice it to say that at no time was the industry "too little or too late." It not only met all the needs of its regular customers, but supplied the voracious demands of our country's phenomenally expanded war production facilities.

Witnessed Most Achieving Years

Colonel Bennion's associations with the electric utility industry of the nation cover its most romantic, its most achieving years. He has seen the electric energy output expand prodigiously, even unbelievably. He has witnessed the unit costs to the consumers decrease until they are just a fractional part of what they were 50 years ago. Most important of all, he has seen the industry regain the public confidence which it was denied in the turbulent years of the Thirties when assaults on the business were the favorite pastimes of the politicians and when it was subjected to punitive, even vindictive legislation.

It would be incorrect historically, and embarrassing personally, to Colo-

nel Bennion to state that he has been responsible for all of the advances which the industry has made during his official associations with the Edison Electric Institute. The electric utility industry of the nation is a collection of many individual companies, each directed and managed by its own officials, each responsive to the local demands which it must serve, each making its own contributions to the sum total of the industry's achievements.

But his has been the unifying, vivifying, directing influence. He has furnished the channels of communications through which the best thought and practice of the industry was transmitted to all of its members. He has been the wise, unresting, and wholly honorable leader in our common fight against the insidious dangers of public ownership. A man of the highest instincts and practices of probity, he has insisted at all times that the only effective answer to error is the truth. Let us never forget that at no time has any information circulated by the Edison Electric Institute been proven to be false. When Colonel Bennion has spoken or written against improvident or deceptive public proposals, his attacks have been devastating in their effects because he has brought to every discussion a masterly command of the true facts and a high, and wholly American, concept of sound democratic policy.

No industry has ever been better served by an individual than the electric utility industry has been served by Colonel Howard Sharp Bennion. He has been our leader, our monitor, our good and useful servant. His vast abilities have won our admiration and our gratitude.

The finest compliment that can be paid any man is to say truthfully that he is a gentleman of integrity. Such a man is Colonel Bennion. He does not know how to be petty, to be untruthful, to be unfair. A devout man, he has put into practice the unflinching honesty, the self-reliance, the tranquil humility of the faith which he learned at his mother's knees and which he has openly professed and unostentatiously lived in all of the years since then. More than 40 years ago his fellow-cadets at the Academy found him "quiet and unassuming" despite his overwhelming brilliance of mind and accomplishments. He is still "quiet and unassuming."

At their meeting held during the Convention, the EEI Board of Directors presented a silver tray inscribed with Board members' signatures and a silver pitcher to Col. H. S. Bennion upon his retirement. Pictured above following the presentation are (left to right) E. L. Lindseth, President, The Cleveland Electric Illuminating Co.; B. L. England, President, Atlantic City Electric Co.; Col. Bennion; and L. V. Sutton, President, Carolina Power & Light Co.

No words that I can speak today will add a cubit to Colonel Bennion's mental or spiritual stature. No gift that we can make will express adequately our warm and everlasting appreciation of the truly mountainous contributions which he has made to the progress of our industry.

But we do not wish Colonel Bennion to take his official leave of us without some mark of recognition of our gratitude. In actual effect, we are making a gift to ourselves. We commissioned one of the great artists of our day to paint a portrait of the Colonel. This portrait will hang in the board of directors' room of the Edison Electric Institute as an everlasting reminder of our deep obligations to him and as an inspiration to all who in the years to come may have any responsibility for the conduct of the nation's electric utilities.

I do not know what Colonel Bennion plans to do in the leisure which he has earned after so many long years of hard work and brilliant accomplishment. But I do know that our best wishes will always accompany him in whatever he finds to do by way of recreation and application. We love him as a gentleman, we respect him as a capable executive, we admire him as our former trusted leader, we honor him as a great American. May the Good Lord whom he has worshipped so humbly bless him with every good and perfect gift!

McAfee, Vennard

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sponsibilities were enlarged to include sales, advertising, and public and employee relations.

Elected to the Board of Directors of Middle West Service Co. in 1946, Mr. Vennard subsequently became a member of the Executive Committee and, in 1953, was elected President. He held that position at the time of his selection as Vice President and Managing Director of Edison Electric Institute, effective upon the retirement of Colonel H. S. Bennion.

Mr. Vennard is a member of Tau Beta Pi, national engineering fraternity, and a member of the Board of Trustees of Northland College in Ashland, Wis. Mrs. Vennard is the former Alyce Richard of Lake Charles, La. The Vennards have two daughters.

What's on America's Mind?

By Boyd Campbell

Chairman of the Board, Chamber of Commerce of the United States

An address before the Twenty-fourth Annual Convention of the Edison Electric Institute
Atlantic City, N. J., June 4, 1956

DURING the past 12 months I have had an experience that comes to few American businessmen. As the representative of a great federation of business organizations, I have been across the length and breadth of our national landscape. The distance was more than 120,000 miles.

From Albany to Austin, from Poland Springs to Pasadena, and from Wichita to Williamsburg, I have met wonderful people . . . so many thousands of wonderful people.

It has been a thrilling experience. No American could emerge from it without becoming a better American, or without acquiring a more perceptive knowledge of the real strength of our country, and of the character, the spirit and the purpose of our people.

In 124 communities, I visited with you and talked to you and thousands like you—singly and in groups. More importantly you talked to me. You talked about the current issues and public questions that affect the well-being of our beloved country.

Impressed by Civic Leadership

By *You,* I mean you in this room and your counterparts whom I met in 34 states. And at this point I must say that I was impressed that the men and women of your dynamic industry occupy positions of civic leadership that are far out of proportion to your numerical strength. The value of your efforts—contributed so freely, above and beyond the call of duty—has been immeasurable in the enrichment of American community life. More power to you! Now back to you whom I met in your own bailiwicks—

By *You,* I mean Mr. and Mrs. Average American — God-fearing, home-loving, tax-paying community builders. Wherever I have met you, north or south, east or west, there was a striking similarity in your thinking.

You spoke the same language. The accents may have varied, but the meaning did not. Your words were far more eloquent and your thoughts were far more significant than any that I could possibly assemble. It seems, therefore, that instead of following my original intention and addressing you on the subject, "What's Right With This Country," I should appear as a reporter—not as an orator—and that will be my role.

BOYD CAMPBELL

I shall undertake to tell you what you said—and from that effort derives the title to this report, "What's On America's Mind?"

Talk About Business

First of all you talked about business—as it was, and as you thought—or hoped—it would be. Last summer and fall, you looked forward to the turn of the year in anticipation that 1955, by national standards, would prove to be our finest business year—and it was.

In planning for 1956, you were hopeful and confident. Now, here we are, with one third of the year behind us, and most of our economic forecasters believe that 1956—on balance—will be a better year than 1955.

You frequently raised the question about the *continuance* of good business.

You recognized your own responsibilities for a stable and expanding economy, and you were making plans accordingly.

You in the electric utility industry were always in the vanguard with plans for expansion—big plans, requiring big vision and big money. You also recognized that higher levels of business would depend, in large degree, on wise tax policies and sound fiscal policies of government. While you did not spell it out in so many words, I am convinced that you share my opinion that our high level of prosperity is an almost perfect tribute to the workings of a free economy. Furthermore, I think you will agree that there was never a more appropriate time to appraise the quality and scope of our economic stewardship.

This appraisal should be a continuing process, and I firmly believe it is becoming so—not only to the advancement of our dynamic system of enterprise, but also to the betterment of all mankind.

Concern for Farmers

You were concerned — and very genuinely so—about the plight of your friends, the farmers, your fellow business men in agriculture. You were troubled because agriculture was not sharing in the prevailing prosperity. You felt that the farm problem had been vastly complicated because politics had become so interwoven with it. If I am reporting your opinions correctly, you are convinced that the problem may get worse before it gets better.

You know, however, that the economic softness of agriculture cannot continue indefinitely without becoming a hazard to our national welfare. You have not claimed to know all the answers, but this you do know: any real answer must be based upon *economic principles* rather than *political considerations.*

There exists among the men of agriculture a tremendous fund of good sense, good judgment, good will, and economic understanding. When we add these priceless qualities to a high faith in the long-range future of farming, there will emerge a real solution to the farm problem if—and this is a big if—political eager-beavers will take a vacation from relieving the farmer.

Taxes

Then—taxes.

Everywhere I went, you talked about taxes.

What did you say about taxes? Surely you would not expect me to quote your exact language in this company! In essence, however, you said: "Taxes are too high." Maybe you've always said taxes were too high. I've never heard you say taxes were too low—or even just right.

A system of taxation that is based upon political expediency and puts a premium on *"Tax angles"* rather than upon good management, undermines your confidence in its equity, and without equity, no system of taxation is tolerable or enforceable.

I could drop the subject of taxes right there, but I would be closing on a negative note. The fact is that your thinking leaned very definitely toward the positive. You were worried not only about the tax burden itself, but about what our tax structure does to initiative, to venture capital, and to opportunity. And that means that you are *for* a system of taxation that inspires initiative, magnetizes venture capital, and broadens opportunity.

You are thinking about tomorrow and what it holds for young people. There is nothing negative about that.

Government in Business

You expressed strong opinions about government in business. First, last and always, you are against the competition of government in economic areas where private capital is *able* and *anxious* to do the job.

Instead of amplifying your opinions, however, I shall condense them into one emphatic, unequivocal statement:

You said: "Let government get *out* of business!"

Now that was a forthright statement for free enterprise. Probably we should leave it right there. . . . In good conscience, however, we must take a hard look at it.

What business do you want the government to get out of? Do you want it to get out of business that is nearest to you and against which you are waging a losing competitive contest because of capital subsidies or tax subsidies—or both? Of course you do. You abhor the inequity and you proclaim your adherence to private enterprise as a matter of principle.

But are you equally as vehement on government competition in areas that are not at your doorstep but in which the identical principle is involved—and probably on a much larger scale. And suppose that you are a beneficiary of a government subsidy in business — a business competing with some one else, but not you—would you still want the government to get out of business?

With deference, I suggest that we could use much more economic understanding and much more consistency in this segment of "What's On America's Mind?"

Atomic Energy

What about atomic energy?

You didn't talk much about it. The subject is still vastly mysterious—but your are learning. Your imagination has been challenged. You wonder if man has attained the capacity to destroy himself without acquiring the discipline to restrain himself.

You believe that the government should release its warehouse of nuclear secrets to private enterprise for continuous research and development for medical and industrial use. There should be no strings attached except those that are absolutely vital to national defense.

You are not concerned with the "give-away" cry of the demagogue and the left-wingers. You are concerned with making the most of our vast investment in nuclear research and you know it will be expedited in the great research laboratories and industrial establishments of American private enterprise.

Social Security

Repeatedly you brought up the topic of social security. You approved the principle but you were amazed at its complexity and alarmed at its implication.

Because the Social Security program is full of heart appeal, it is also full of political allure. You recognized its attractions for the articulate and plausible—sometimes uninformed —and sometimes unprincipled office seekers who attempt to buy votes with your money by constantly raising the social security ante.

Your deep concern was indicated by the number of times you posed the question: "How far can we go?" Is it conceivable that the great humanitarian concept of providing basic security for our senior citizens and for widows and orphans could become an economic albatross about the neck of our body politic?

Hoover Commission

Now this leads us directly to the recommendations of the Hoover Commission. What did you say about those recommendations?

Not enough. Not nearly enough.

True, ninety-nine and forty-four one hundredths per cent of you were for the recommendations of the Hoover Commission, which we usually call the Hoover Report, just to simplify the reference. While you were emphatic and highly articulate on the subject of taxes, the *same emphasis* did *not* carry through on the Hoover Report.

This is paradoxical, because the adoption of the Report would provide the tax relief which you so earnestly seek. Likewise, it would accomplish your vigorous demand that the Federal government remove itself from competition with private business. Not only does the Hoover Report provide the means of bringing these long-sought objectives into reality, it proposes the modernization of our national government, which is a consummation devoutly to be wished.

This magnificent audit of government, produced by the best talent in America, after a prodigious amount of study, however highly respected, is *not* self-enacting. To get its recommendations translated into law will require the full force of your informed, united, and sustained effort. It will take leg work, head work, and heart work.

I do not share the opinion of those who feel that this is not the time to press this matter. It is too important to delay—under any consideration.

The Labor Merger

And now—the labor merger.

We are confronted with the accomplished fact of a union between the American Federation of Labor and the Congress of Industrial Organizations, comprising a membership of about 15 million. In many groups, in many states, I have sat in on conversations in which you attempted to appraise the impact of the merger on industry, on politics, and on the public weal.

If I have correctly gauged your thinking, you look upon the labor merger as a possible menace—and as a possible promise. Labor's objectives, in many respects, run counter to your own. Labor tends to the idea of more government in our economic system—more concentration of power in Washington.

You have been working in exactly the opposite direction. You believe that one of freedom's greatest safeguards lies in the *dispersal* of authority, and you will never surrender that conviction. Labor's vast power in effect has been concentrated. At every point of the compass in Washington great new temples of labor are being constructed—or have been constructed. There are some 15 in all. Those buildings are solid evidence of labor's growing strength and of its entrenchment in Washington to present its views to government under the Constitutional right of petition.

You have expressed no quarrel with that. You only hope that as labor comes into a realization of its great size and strength, it will be as zealous in policing itself for the general well-being as it has been zealous in pressing its economic demands. You believe that the American public's awareness of the potential danger in bigness—big government, big business, *or* big labor—is a safeguard to the abuse of such power.

You have hailed the high-principled statements of George Meany, President of the AFL-CIO. He has said—with emphasis—that as labor grows bigger and bigger, it must discharge its responsibility to the community as a whole in a manner that will bring credit to the union movement. Mr. Meany will have your good wishes if he moves against the intolerable evils in the secondary boycott—that malignancy in the body of our economic-social system. If Mr. Meany mobilizes his power and influence to clean up terrorism and racketeering in unprincipled unions, he will not only enhance the stature of American labor, he will perform a service of incalculable value to our country.

The Russian "New Look"

And then, you spun the globe:

You have been intrigued, amazed and—if I am not mistaken—somewhat amused at the fantastic Russian spectacle, the so-called "new look." The ghost of Stalin has been hailed before the court of his successors and charged with every crime in the book. No one is easier to convict than a ghost, and so, the present masters of the Kremlin, serving in the triple capacity of prosecutor, judge, and jury, have convicted "good old Joe." He is solely responsible, so *they* say, for the lies, deceit, duplicity, and murder — and all the other sins against society — upon which the Soviet regime was built.

Among the many grotesque contradictions in this situation is that the same old gang is ruling Russia—minus Stalin. It is the same old gang with a brand new look.

They are playing that new look for everything it is worth and, let's face it, they are getting *away with it* in too many corners of the world. Day after day we are deluged with stories of the back-slapping and baby-kissing tours of Russia's ruling clique. Synthetic good will is simply oozing from their pores.

But—as its present masters parade across the world behind their masks of benignity—*you* have not forgotten the real character of the Russian apparatus. No, *you* have not been fooled. *You* have not been enticed by the song of the Russian Lorelei—because in that direction lies disaster.

There is nothing you would welcome more than a true change of heart in the rulers of the Kremlin, because deep down inside each of you is a love of peace—and the hope that it may eventually prevail throughout the world. You cannot envision, however, such a change among the men who were part and parcel of the great Russian bloodlettings.

You are committed to the principle of St. John the Divine that men should be judged by their works—and so you are in favor of keeping America's defense impregnable while we watch and wait for more convincing evidence of the Soviet's regeneration.

When Russia has reversed all the entries of double dealing—

When she has released the thousands of slave laborers and war prisoners who are being held in captivity in violation of law and human decency—

When she has freed her satellite nations and done everything possible to expiate her crimes against civilization—

When she has repudiated her diabolical purpose to rule the world—then perhaps it will be time to take her new look seriously.

Education

How about your views on education?

There was never a time in our history when education was so important to our national vigor—to our very survival—as it is today. You know this and you have a sense of compulsion to do something about it—just what, you are not too sure. The towering problems of teacher shortages, of tremendous manpower demands, particularly in the fields of science and engineering, and always the problems of finance, do not lend themselves to easy solutions.

Always, in talking about education, there arose the subject of Federal aid. And what is your attitude about Federal aid? You want no part of it, and you understand clearly why.

You understand that just as livestock lose weight on a long trip to market, so does your tax dollar lose weight on a round trip to Washington.

But that is not your main objection to Federal aid for education. Your objection goes much deeper than that. You believe in the *dispersal of power*, particularly with respect to education. You know that if and when local and state authorities surrender their responsibilities for the support and control of our schools, freedom will have lost one of its mightiest citadels.

The Founding Fathers allocated only 17 powers to the Federal government. The responsibility for education was not one of them. That responsibility was left to the individual states and the people.

If I might be permitted to add a footnote to my interpretation of your attitude toward Federal aid to education, it would be this: The increasing demand for Federal aid has its genesis in the *failure* of the states to meet educational needs. It can well be that there has been too much emphasis on states' *rights* and not enough on states' *responsibilities*. If the states do not proceed at once—*now*—to close the gap between what *is* and what *ought* to be in education, we will *have* Federal aid. Children cannot wait, and the national welfare is involved.

Finally, the election year—the year

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Engineers for the Electric Utility Companies

By H. S. Bennion

Notes on a talk to the EEI Engineering Committees, Chicago, Ill., May 1, 1956

I ENJOY being with and hearing the talk of engineers. It is my experience that in gatherings of engineers, discussions are pointed to develop and disclose significant facts. They have learned to respect facts, to prove and accept them. Engineering work requires integrity and has a way of exposing lack of it.

The power business in its nature is an engineering business. Therefore it is a good place for engineers to find satisfying work. I came to this industry at the age of 37 from the Corps of Engineers, U. S. Army, as Director of Engineering of the National Electric Light Association and immediately was thrown into contact with the engineering committees of that organization and with the prominent engineers of the power companies from one end of this country to the other. I was profoundly impressed with their uniformly high caliber, their proficiency, their integrity, and their devotion to the practice of imparting freely their operating and engineering knowledge. It was amazing to me to see in action this custom of exchanging information which had long been practiced in the industry to the great advantage and benefit of all power consumers, not only in America but in the entire world.

I also had the very profitable and encouraging experience that these company engineers went far out of their way to educate me in the basic characteristics and considerations of the electric utility business so that I came to an understanding of many features of the business and to a good working knowledge of its personnel.

One Thing Lacking

There was one thing lacking according to my previous training and experience in the discussions of the engineering committees when I first became acquainted with them. That was a lack of full and free discussion of cost elements. The emphasis was thrown more on technical and operating questions and not sufficiently, in my view, on the dollar sign. I bring up this point because of its bearing on the present shortage of engineers and upon the future supply of engineers from the power business.

What is an engineer? Is he a technician or is he one who manages the whole engine? The name, you know, came from the military profession. Engineers were those who built and operated engines of war. In the military service I was taught to have a respect for the whole job and its requirements. I understood very well that I had to master and handle my part of the job but I could do my part best if my interests and my efforts took into account the whole job and its purpose, not just the piece of it I was specifically charged with.

Many Important Facets

I have said that the power business is an engineering business, but it is a business with a number of important facets—finances, rates, sales, accounting, other operating and management functions, regulatory and other government relations, relations with many other businesses and industries, public relations, legislative relations, etc.

What are your own characteristics? Do you have a real and active interest in all the business of your company? Do you study and get to the bottom of all the important considerations affecting this business? Are you and have you been willing to take responsibilities that require of you a good comprehension of financial policies and decisions? The same for rate making and for other commercial policies; for accounting questions, particularly those that significantly concern your part of the business, and that is most of them. The same for regulatory questions involving the company. If in the past you stuck out your neck did you profit from mistakes and from justified correction? Were you strong enough and big enough to keep on your course when you got unjustified correction from those over you and criticism from associates, and did you learn from these? Did you learn the art and the wise rules of taking responsibility?

Do you form judgements about other facets of the power business without adequate information? I do not mean that you should master details of these other facets, but do you gain a sound grasp of governing factors so that your ability to advise and to help in these other fields is real? Do you indulge in non-constructive criticism of other departments and thereby stand in the way of your ability to help the whole job? Do you naturally like to work with others?

So you sense responsibility for others to get the best out of them over the long pull?

Do you train yourself to speak and write simply, clearly, and convincingly to the other fellow? Have you taught yourself to be reasonably articulate? Do you think straight and all the way through on subjects so that you are in a position to talk simply, clearly, and convincingly and do you make an efford to convey your meaning to the person or persons addressed? Engineers are charged with frequent failure in this aspect of their work. Thereby they leave an opening for someone else to do their talking for them or to serve as an interpreter for them.

Do you feel like shunning operating duties or that you are wasting time on them? Do you have a desire to get back to staff work, planning, design, research, etc?

Inherent Abilities

All of us have different capabilities and there are places for each of these, but in his earlier years most every man has more inherent abilities in several directions than he ever fully develops. This applies also to ability to convey ideas and ability to think straight and clear through.

Apply this principle to your own course and to your own handling of those who work under you. It will tend to get more growth out of yourself and out of each of them and to make for more satisfaction with your or their later years of service wherever you or they work. It is satisfying to work for a man who is on the job and able in his job. It is harder to work for a man who is not as able in his job as you would be in that job. Consider this point when you are

young and capable of development and opportunities for more work and responsibilities are about you. Don't wait until 35 or 40 to look this point in the face.

Back at the turn of the century engineering deans and professors would tell graduates to get experience on many different jobs during the first ten years they were out of school, changing on an average once a year, so as to develop engineering judgment, because the business world pays for judgment.

It has been my observation that the growth in reach and breadth of capacity of an individual usually occurs in his first 12 years out of school. Don't condemn an engineer under you for little administrative grasp or vision if you kept him in a cell until he was nearly 40.

Incentives

Not only rate of pay and prospects for more pay, but a chance to grow and develop in capabilities and accomplishments, opportunity for challenging work, chance to try one's wings and gain recognition, are the attractions to young men of natural ability and good sense. Later comes a desire to have a voice in making policies and giving direction thereto. What can you do about this? Much. By your own progress you can help to open up and keep open the opportunities of those who come behind you.

Taxes have sharply lowered the incentive of monetary rewards and placed decided limits on opportunity for financial compensation for extra effort and responsibility. The weighty burden of a multitude of new laws and mushrooming obligations incidental to company office causes many a younger man to wonder if it is worthwhile to struggle and perhaps to shorten his life span by the work and grief associated with the higher positions in the company. But how will that younger man size up his course toward its latter end, particularly when he finds himself following policies and instructions laid down by men he knows had lesser ability than himself some years back, but men who did not shun extra work and trouble and who did not stop to question whether added effort and added responsibilities were worthwhile.

Shortage of Engineers

We hear reports of the low standing in engineering schools and among engineering graduates of offers for employment in electric utility companies. Why should this be the case? Any business rendering the service to the people that an electric utility company is now and will in the future be rendering will fare well over the long pull in attracting engineers, provided its engineering business is reasonably well handled.

The present shortage of new engineers is partly due to fashions among students and other transient conditions. These conditions will tend to correct themselves. The trouble is also partly due to dark reports to their alma mater from utility engineers and to the unfavorable counsel from engineer fathers to their sons.

The cure for this abnormal situation will involve time and attention to a number of basic considerations, among them—

The doors plainly wide open to promotion to the top of the company.

Chance for recognition every time it is deserved.

Challenging work for the individual.

Careful selection of engineers and careful selection for jobs on real merit obviously as nearly and fairly as human judgment can determine merit.

Reappraisals of merit. Some men hit their stride later than others. Some flower early and fade later.

Fair and reasonable policy on compensation.

Intelligent division between work requiring engineers and work better filled by technical artisans.

An established practice of finding opportunity for responsible experience in different engineering work in the company.

Inter-company traffic in engineers to enlarge the opportunity for gaining experience and judgment.

Inter-industry traffic in engineers to increase opportunities of further gaining experience and judgment, particularly in earlier years and as a preventive from going stale and an antidote for spreading dry rot in the company. Such engineers may be drawn back to serve with added value the industry in which they made their start.

A sound policy from top to bottom of eliminating misfits and the inadequate after honest efforts to correct deficiencies. A company cannot have healthy promotion without healthy firing. To be beneficial the policy requires that there be no tinge of personal prejudice, jealousy or envy and that there be no deferring the action or dragging out the process until a claim for consideration appears justifiable or until there has arisen the aspect of persecution or prejudice. There is a proper time for firing the misfit. It can be done without doing great harm. More often it can help a man to get where his qualifications fit much better. There are sound rules for firing men and every engineer should learn them well and practice them.

Responsibility for Correcting the Shortage of Engineers

Is the shortage of engineers the fault of and the job of top management? What is your responsibility as engineers in this matter and what can you be doing about it? You can do a great deal about it. You can put your own part of the house in order and you can wisely lend a helping hand to those who work under you. Do you have the character, the sprit of helpfulness, the desire and patience, the unfeigned interest in others, the lively memory of your own recipience of kindly and profitable help, the rounded out experience and judgment, the ability to see beyond the immediate, to be able to give real help to younger men? Does your interest in the advancement of engineers stop with yourself?

Take more serious thought of assigning work to your associates for development, for experience, for responsibility and a chance to grow. Call to mind on what jobs, where and how you got real growth and development. You will find it came with responsibility, coupled with guidance from men able to give you help. Take a genuine and not an assumed interest in the engineers under you in particular, but also in all of those in the company. Take the trouble to teach and to guide. Don't misplace your help and be sure it is wise and will result in permanent benefit.

Don't be concerned about who gets credit for what. Don't whisper around or boast about giving help. If you do so your opportunity to give help comes to an end. Just aim to be helpful. The bread you cast on the water will all come back.

When I entered the Corps of Engineers, which was then a small body of about 200, the traditions and the

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The American Workers' Stake In Free Institutions

By Gordon M. Freeman

International President, International Brotherhood of Electrical Workers

An address before the Twenty-Fourth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 4, 1956

I APPRECIATE very much the opportunity to appear on your program at this convention and to discuss certain matters in which I believe we share a mutual interest.

As you know, the organization which I represent has made it a practice for many years to invite leaders from management of the investor-owned utilities to address our national convention. I am convinced that these exchanges of ideas have been and can continue to be of great value in promoting better understanding.

The International Brotherhood of Electrical Workers was established in 1891, almost at the beginning of the electrical age. Our membership now numbers more than 645,000 workers who are engaged in every branch of the electrical industry. A very large segment of this membership is employed in the business of generating, transmitting, and distributing electrical energy. Many thousands are employed by the companies represented at this convention. I am sure that this audience is aware of the fact that the Brotherhood has a strong and legitimate interest in the industry which the members of this Institute represent from the side of management.

Emphasis on Responsibility

From the beginning, the International Brotherhood of Electrical Workers has placed strong emphasis on the importance of responsibility. In our history, this theme has been constant, in good times and in bad, and we take pride today in the reputation we have built as a responsible labor organization. While the leadership of the Brotherhood has always recognized the welfare of the membership as its first duty, I think it has been amply demonstrated that we expect and, indeed, require, our members and officers to conduct themselves in a responsible manner.

GORDON M. FREEMAN

The title of my talk, "The American Workers' Stake in Free Institutions," involves certain basic considerations which are of extreme importance in the context of current history. The fundamental political ideas and institutions of our great country are based on freedom and liberty. Whether we look to the words of our historic documents, such as the Declaration of Independence and our Constitution, or whether we look to the utterances of our great statesmen, such as Jefferson and Lincoln, we find strong emphasis on individual rights and the clear recognition of the need for restraint on the powers of government.

In our country, the citizen comes first and those who wield the power and authority of government must never be permitted to forget that they are subject to the controls which have been devised to insure that the government will always remain responsible to the people.

This, of course, does not mean that our government should be weak. Only a strong government can respond to the needs of the people when faced with the dangers of war, economic depressions, or other catastrophes. We have all seen the surrender of individual rights and the increase of governmental power to meet the necessities of such grave situations. We have always looked upon these changes in citizen-government relationships as temporary expedients and have accepted them only to the extent that appeared necessary under the circumstances.

In our time a great question has been raised which affects our country, and the world we live in. That question is this: "Can we have political freedom without economic freedom?" The American answer to this question is a resounding "NO."

There are other countries which claim to be advancing toward the goal of political freedom, while at the same time denying economic freedom. I do not believe that these freedoms can be separated. I do not think that either of them can long endure without the other.

The free political institutions of our country have furnished the indispensable basis for the creation and development of our free labor movement. It is my view that the institution of free labor has made, and will continue to make, substantial contributions to the cause of safeguarding our political and economic freedoms. In recent years, this contribution has been recognized and appreciated by a large segment of progressive American management.

Basic Economic Objective

The basic economic objective of the trade union is the achievement of a collective bargaining contract, which determines the wages, hours, and working conditions of the employees included therein. The process of collective bargaining gives

the worker, through his union, an effective voice in determining his wages, hours, and conditions of employment. This economic democracy is not possible in many economic enterprises which are operated by the government.

It has been the experience of the IBEW with municipally-owned utilities, public power districts, etc., that legal rights to make agreements with management have been denied. This denial of our economic freedom is based upon the view of these governmental agencies and subdivisions that the sovereign cannot abdicate its powers and *must fix* the wages, hours, and conditions of work of its employees by *administrative order* rather than through negotiations with the unions' representing their employees.

Opposition to Government Ownership

The IBEW cannot support an arrangement which denies collective bargaining and which results in the destruction of its local unions. Because of these labor considerations we have opposed, and will continue to oppose, the extension of government ownership and operation of electric light and power facilities beyond the actual necessities of the situation.

We recognize that government has a proper place in developing power resources when private companies are either unable or unwilling to do the job. It was for this reason that we supported such Federal projects as TVA and Bonneville. Since the power requirements could not be made available through other means, we felt that these projects fully justified our support.

But public necessity does not require government ownership and operation when private companies are willing and able to do the job. Today, however, we find that slogans of the past, based on practices and conditions which no longer exist, still furnish powerful political support for government ownership under the more attractive name of "Public Ownership."

I think it might be well to recognize, at this point, that the choice of words used in describing a given situation is quite important in determining public reaction. It has become customary to refer to government-owned and operated electric light and power plants as examples of public ownership. I believe that the industry has made a substantial contribution in emphasizing that so-called private companies are also owned by the public. It would seem to me equally important that electric light and power plants, which are actually owned and operated by government agencies, should be referred to as government-owned and -operated, in the interest of accuracy.

There is another aspect of the preservation of American free institutions which is deserving of serious attention. I believe it is self-evident that institutions however free cannot survive, if they are unworkable. On the other hand, Americans will not accept institutions which are not free, no matter how workable. It is, therefore, the joint task of labor and management to recognize and assume responsibility for the development of attitudes and procedures which by voluntary means will prove effective in guaranteeing the workability of our free institutions.

It is essential that an industry should produce efficiently the goods and services required by the public, and that such economic elements as prices, wages, and profits be determined in such manner as is deemed just and fair by the consumer, the worker and the investor.

It is my conviction based on years of experience in this industry that, on the whole, both labor and management have voluntarily sought to discharge these responsibilities in a satisfactory manner. There have been particular instances—sometimes of a highly dramatic character—where this has not been the case. It would, therefore, seem wise to give consideration to the possibility of effecting improvements in this regard.

Settlement of Labor Disputes

The electric light and power industry is particularly sensitive to public reaction when interruptions of production occur as a result of inability to settle labor disputes.

There are some who would resolve this problem by arbitrarily prohibiting the right to strike in this industry. They fail to realize that the right to withdraw from production is an indispensable element of economic freedom. They also fail to realize that interruptions of production are not caused by a desire to engage in such activity but rather by a failure of the parties to resolve an underlying labor dispute.

Taft on Compulsory Arbitration

There are others who would resolve this question by establishing a procedure for government compulsory arbitration coupled with a prohibition of the right to strike. I believe the best answer to this problem is found in the words of the late Senator Robert A. Taft of Ohio in the debates which took place in connection with the adoption of the Taft-Hartley Act. Senator Taft made it clear that the proponents of the Act were opposed to compulsory arbitration in all of industry, including public utilities. He said, and I quote:

". . . If we impose compulsory arbitration, or if we give the government power to fix wages at which men must work for another year or for two years to come, I do not see how in the end we can escape a collective economy. If we give the government the power to fix wages, I do not see how we can take from the government the power to fix prices; and if the government fixes wages and prices, we soon reach the point where all industry is under governmental control, and finally there is a complete socialization of our economy.

". . . If we once begin a process of the government fixing wages, it must end in more and more wage fixing and finally government price fixing. It may be a popular thing to do. Today people seem to think that all that is necessary to do is to forbid strikes, fix wages, and compel men to continue working, without consideration of the human and constitutional problems involved in that process.

". . . If we begin with public utilities, it will be said that coal and steel are just as important as public utilities. I do not know where we could draw the line. So far as the Bill is concerned, we have proceeded on the theory that there is a right to strike and that labor peace must be based on free collective bargain-

ing. We have done nothing to outlaw strikes for basic wages, hours, and working conditions after proper opportunity for mediation."

There is a third alternative which may accomplish our mutual object of settling labor disputes fairly and justly without resort to strikes and without the detrimental effects of government intervention.

The International Brotherhood of Electrical Workers, together with the employers in the electrical contracting industry, have developed a procedure for voluntary settlement of disputes without resort to strikes. This procedure has been in effect for more than 35 years. It has stood the test of time and is being utilized more today than ever before.

I think that great good could come of a mutual consideration of the experience in the electrical contracting industry. I firmly believe that we could formulate a similar plan suitable to the electric light and power industry.

"Council on Industrial Relations"

The concept of the plan in the electrical contracting industry is very simple. Our "Council on Industrial Relations" is composed of equal representation from the two national organizations concerned. Care is taken to select representatives from various parts of the country. This council holds regular quarterly meetings to hear and decide disputes which have been properly submitted. Every member of this council is an "interested" party, fully aware of the practical problems of operation in the industry. Our experience with so-called "disinterested" parties causes us to prefer the thinking of those directly engaged in the industry and fully aware of the results which will flow from their decisions. I think we have all known of cases where the "disinterested" party, with the best of intentions, has rendered decisions which created problems instead of solving them.

Last month I participated in the regular quarterly meeting held in St. Louis, at which 22 cases were heard and decided. Each of these cases could have resulted in economic loss to the worker and the employer if the council machinery had not been available to render a final and binding decision on the issues in dispute. It must be understood that this is not a technique of compulsory arbitration. The parties to the local labor agreements voluntarily included therein provisions to use the council procedure whenever disputes could not be settled at the local level. The council strongly prefers that all disputes be settled at the collective bargaining table, and will not accept a case until good-faith bargaining at the local level has failed to effect a settlement of the controversy.

I am convinced that a similar plan with appropriate modifications would prove of great benefit in the utility industry, and I suggest that it be given consideration at the national level.

In closing, I would like again to refer to the topic which I chose for this program. The American worker does have a vital stake in free institutions. Further, I think he has a vital stake in our free enterprise system, so long as that system insures that his "free enterprise" is also recognized. We live under a system of checks and balances, and I submit that free enterprise for both management and labor has worked to the best interests of both, and, at the same time promoted our strength and our prosperity as a nation.

Need for Collective Bargaining

The free enterprise system cannot be a one-way street. Collective bargaining is a basic requirement if the system is to operate in a manner which is fair to both management and labor. There are some in management, even in this industry, who do not understand this. The refusal to recognize this fundamental point is, in my judgment, a real disservice to the cause of free enterprise.

I am greatly encouraged by a growing tendency in the ranks of both management and labor to look for the substance behind the slogans. As long as we remain genuinely dedicated to our free American institutions we can look forward with confidence to better management-labor relations based on mutual respect for the rights of all parties which is inherent in those cherished, and uniquely American, institutions.

Coffin Award

(*Continued from page* 174)

It was presented to Mr. Robinson by Ralph J. Cordiner, President, General Electric Co., at ceremonies conducted by Mr. Branch.

Leadership of Washington Water Power in combatting socialized electric power and the maintaining of strong corporate status involved several points:

(1) An unwavering determination on the part of company officials and employees to survive in the face of a destructive public utility district law, Federal encroachment into the field of private enterprise, and a trend of the Federal government to dominate and control power resources in the Pacific Northwest;

(2) Voluntary and extraordinary efforts on the part of company employees by way of preparatory training to acquaint themselves with their discouraging situation, making plans for policy changes to improve service to customers, creating communication channels such as a free enterprise film library, and speakers' bureau, extensive personal contracts by both union and non-union employees, and participation in numerous community endeavors by all employees as good citizens;

(3) Effective execution of the company's practical public relations program, demonstrating exceptional loyalty and resourcefulness on the part of employees, the effect of which was improved public relations in all parts of the company's service area.

Voters in the Stevens County election organized themselves into a strong citizens' committee, held mass meetings, petitioned PUD Commissioners, and made thousands of personal contacts; Grange members took sharp issue with the state Grange, which had gone against the National Grange policy favoring private enterprise. Election results gave The Washington Water Power Co. a 71.6 per cent majority, with rural areas and municipal ownership sections reaching a high of 82 per cent of the votes favorable to the company. Post-survey analysis showed that people changed to private enterprise because they opposed socialism, and had greater confidence in the American business system.

As the Public Sees Us

By Charles E. Parker
President, Central Surveys, Inc.

An address before the Twenty-Fourth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 5, 1956

THESE comments are in three parts. First, how the public views this industry—what facts it has and what misinformation, what gaps or areas of complete unawareness. Second, how the public *reacts* to conflicting claims and counterclaims about the industry. And finally, something of how we may sharpen our own perception of public opinion and improve further the presentation of facts that have done much to win public approval and support.

What the public knows about this industry is limited. What it wants to know is limited. And the information the public has the time or attention to absorb is also limited.

It knows that electricity does a great many things and does them well. It knows electric rates are reasonable and that service is good. Fig. 1 shows average opinions from many surveys over a seven-year period—all of them surveys of private company customers in urban areas.

Public Sees Through Filter

The public sees most things through some sort of filter. So the resulting impression is seldom entirely true or clear.

For example, the issue of government or other public ownership is seen in part through a filter of opinions about the cost of service. In Fig. 2, each dot represents an election in which the issue was public ownership. The percentage vote in favor of continued company ownership has been high or low in proportion to whether approval of the cost of service was high or low. If the public is satisfied with what it pays for electricity, it does not matter greatly if Federal power or municipal power is expected to cost a little less. But when there is much criticism of rates, the idea that cheap power can be obtained from some Federal or municipal project has a much greater appeal to people.

CHARLES E. PARKER

Opinions about the cost of electric service often depend not so much on the actual level of rates as they depend on other impressions the public has gained—from advertising, from person-to-person discussion, or other sources. Fig. 3 shows wide variations in approval of electric rates between 21 different towns served by the same company with exactly the same rates.

Opinions about the cost of service can also affect customer attitudes about a utility company in many other ways. Fig. 4 shows a decline in approval of the service from one utility company, a decline in opinions whether its profits are reasonable, its employees courteous, its donations to worthy causes liberal, and in opinions about its other community activities—all taking the same trend as a decline in approval of its rates. It was not an electric utility.

Another filter through which the public sees an issue may be some statement of it, or some decision regarding it, by an authoritative body—the Congress, a Federal or state com-

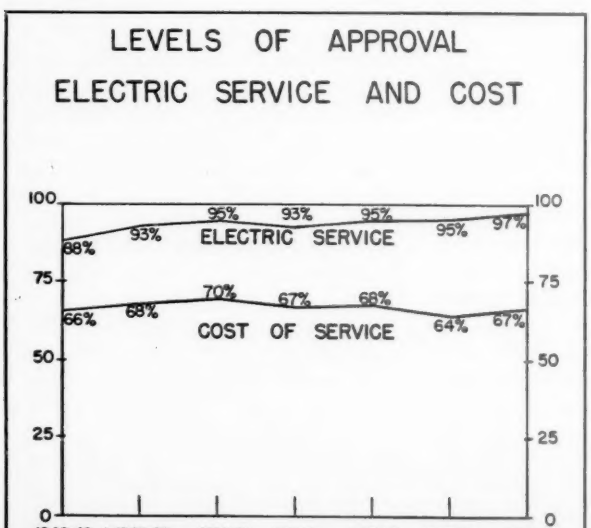

Figure 1

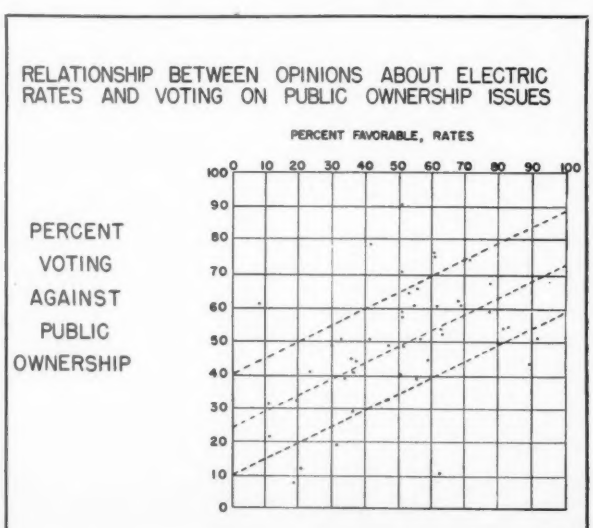

Figure 2

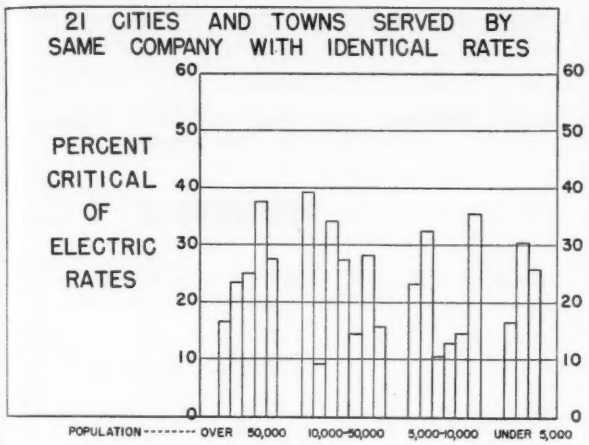

Figure 3

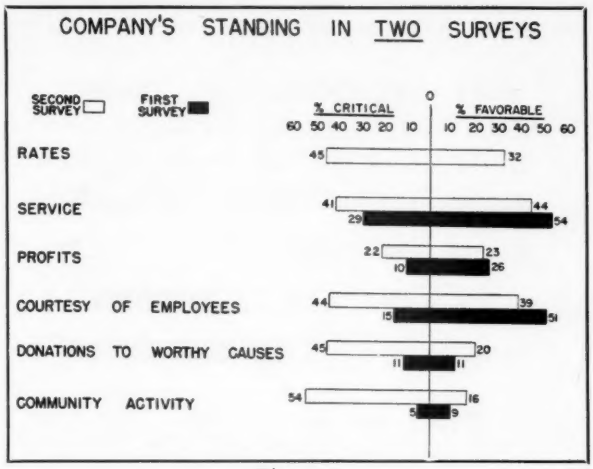

Figure 4

mission, or, in certain cases, a city council. For example, there is a strong tendency to accept the Federal Power Commission's decision on Hells Canyon—even among persons who had previously favored Federal development.

Still another filter in the public's view of an issue is its presentation by the advocates on either side. A one-sided presentation is likely to be accepted with little regard to its merit. Illustrations are TVA or Dixon-Yates. And there have been many *local* examples of the one-sided presentation of some issue, which the public has accepted because no alternative view was adequately presented for consideration.

Time and Space Limitations

Public perception of an industry or an issue is further limited by factors of time and space. The average reader devotes so little time to keeping up with the news that events rush by him, without much chance for any of them to make anything but a slight impression, unless they are happenings of the first magnitude.

Distance also limits public perception of an issue. A Federal project of maximum size and importance may receive less than half the attention 100 or 200 miles away that it gets within a 25 or 50 mile radius.

Perception also involves more than the central object in a picture. It involves light and shade and perspective and background. In the same way, public perception of this industry, its problems, the issues in which it is involved—these things are not the same to all viewers because they see differently the whole background of business and government. One man sees big business as good, another sees it as evil. One inclines to depend on Washington for help and guidance. To him only the government is big enough, or the people in it smart enough, to accomplish major undertakings. Another sees in government intervention only the surest guarantee of inefficiency and delay, if not failure.

Perception a Relative Thing

Perception is, finally, a relative thing. The public sees a business not standing alone, but measured against many others. It values a business in terms of liking it "better" or "not as well," compared with other businesses.

As to the electric power industry the public's evaluation is emphatically in terms of "better." Wherever people are asked to compare this business with others, the electric power industry stands out for fine service at low cost, for quality of personnel, for citizenship in the community and in other respects.

There are gaps, however, in public awareness—blind spots in which public perception is lacking. One example is what the companies are doing to increase capacity; another, their activity in the communities they serve. A third important blind spot relates to the implications in government ownership. In one survey only 37 per cent said there was a chance to get into socialism a little at a time. (Fig. 5.)

I suspect that many facts about farm electrification are subjects of another blind spot. It has been found that even rural opinion leaders, in areas of REA co-op activity, are surprisingly uninformed about the proportion of farms electrified in their states or nationally. (Fig. 6.)

The companies are not given credit for their efforts in rural electrification. Even in states where the companies served more customers than the co-ops, 55 per cent of the rural leaders interviewed in a survey said erroneously that the co-ops served more.

There are also big gaps in the information of rural electric co-op members. In a study of more than 2,500 of them in four states, it was found that only 4 per cent knew the co-ops have preference over the private companies in the purchase of Federal power—only 4 per cent. And in states where there were specific proposals or plans for REA generating plants, only 8 per cent of the rural electric co-op members said they knew anything about these plans—less than one in every ten.

Perception is also clouded because of misinformation. Many people still think of flood control as perfectly consistent with hydroelectric power; they think of power as a natural by-product of flood control, that it is cheap because water is cheap, and plentiful because water is plentiful; think that it

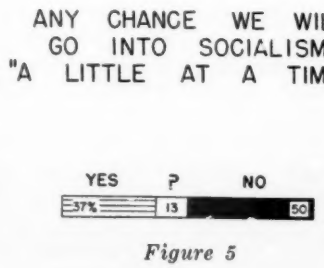

Figure 5

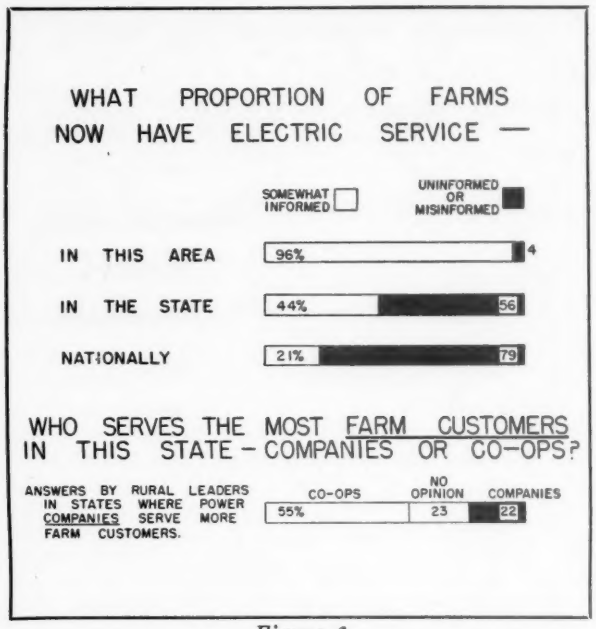

Figure 6

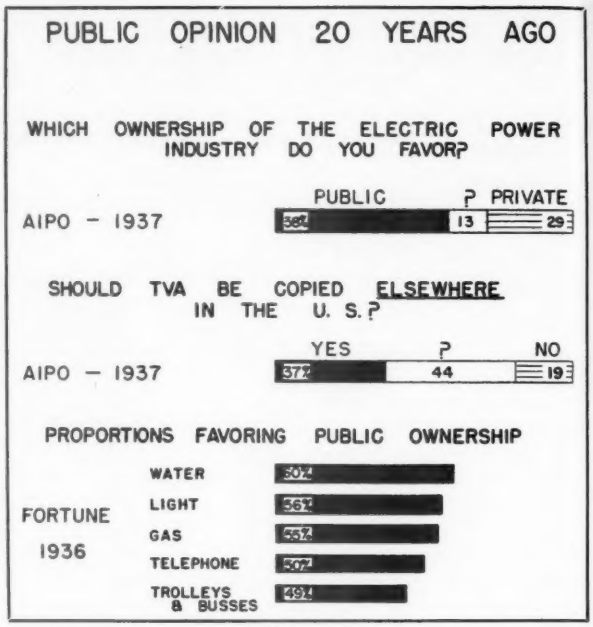

Figure 7

is quite natural for the government to sell the power to help pay for other benefits from the project. Misinformation is largely the product of one-sided presentation such as we have mentioned before—examplified by TVA or by the Dixon-Yates controversy.

This discussion concerns, secondly, how the public reacts to conflicting claims and counterclaims. Opinions may differ widely about how the public reacts to such claims but it is something that can be measured over a period of years. And this measurement shows that the electric power industry has come a very long and successful way in gaining public support.

Twenty years ago a survey of voters by Dr. Gallup showed greater preference, by two to one, for public ownership than for private ownership. Also, by nearly two to one voters favored an extension of the TVA idea to other areas in the United States. (Fig. 7.) A *Fortune* magazine survey of the same period showed majorities in favor of public ownership of electric and gas service as well as water. And near majorities favored public ownership of telephone systems and bus lines.

In addition, there was a whole climate of unfavorable public opinions 20 years ago. (Fig. 8.) Large proportions of the voters said that big business was bad for the country and should be replaced by small concerns. Nearly six in every ten thought big business was making more than a fair profit. (That was in the 1930's.) More people were inclined to blame business

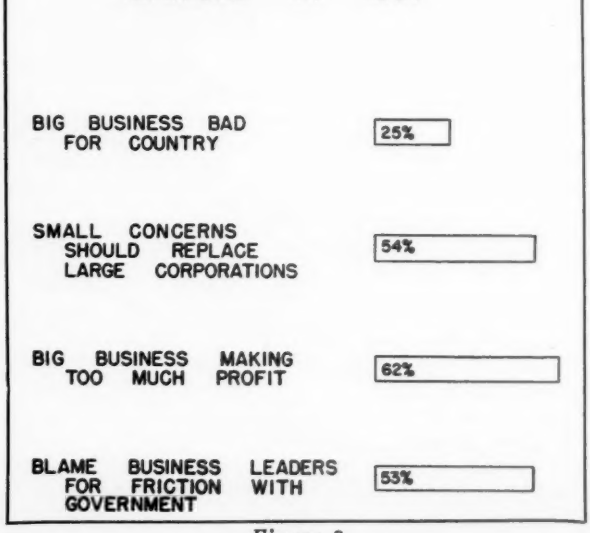

Figure 8

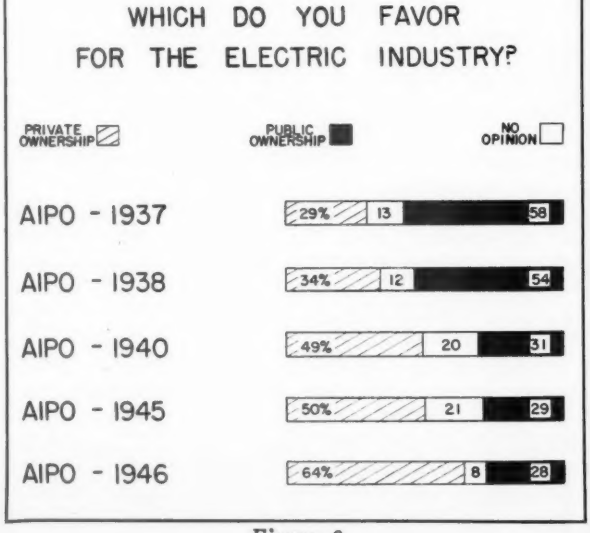

Figure 9

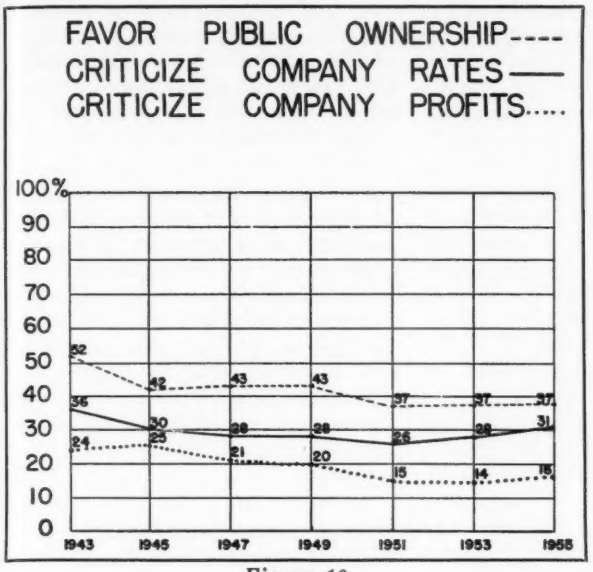

Figure 10

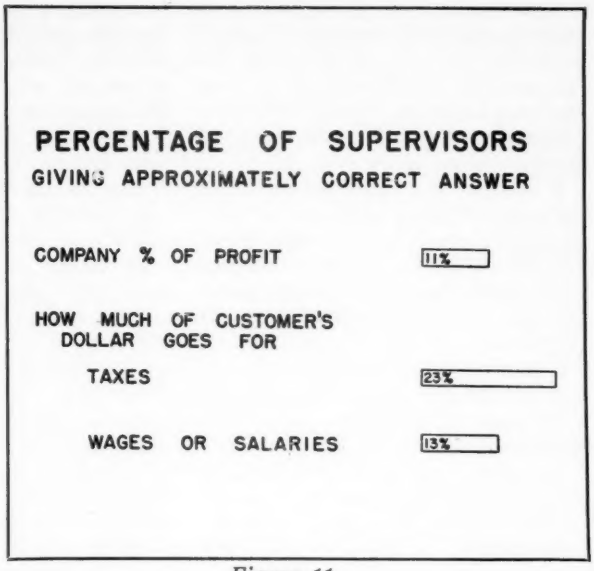

Figure 11

leaders than to blame government administration leaders for any unfriendly feeling between them.

Those were measurements of public attitudes 20 years ago. But even at the halfway mark— ten years ago— there had been a substantial improvement. In a *1946* survey Dr. Gallup found that support for private ownership had increased to *64 per cent* of the voters. (Fig. 9.) The ECAP surveys cannot be exactly compared with Dr. Gallup's because the questions were asked differently. But as you know, the ECAP surveys have shown—over the years—a decline of about one-third in the answers that are unfavorable to private ownership, its rates, or its profits. (Fig. 10.)

The trend of times and conditions—aided notably by the vigorous resistance this industry has offered—have at least held in check the usual trend of opinions on issues.

When a new issue first arises, there is no consensus of opinions about it. But there is an instinctive resistance or a back pressure that builds up against whatever is new, strange, or unfamiliar. This back pressure gradually weakens as a consensus develops in the direction of public acceptance. Finally, there is a break-through and the idea is generally accepted by nearly everyone.

That has been the course of opinion trends on such issues as social security. But by virtue of your efforts it has not been the course of public opinion regarding Federal ownership of electric power. The significant thing to remember is that opinion trends must be stopped at this break-through point, or they are not likely to be stopped at all.

In speaking about public reaction to conflicting claims and counterclaims, it is easy to generalize too broadly. Reactions will differ substantially, for example, depending on whether the issue is national, regional, state, or local. On an issue of government power nationally, the public reaction is typically one of indifference. But on a local issue of municipal ownership of power, as you know, tremendous local interest may be generated.

I have previously mentioned other variations in public reaction to conflicting claims and counterclaims—depending on such factors as distance, on whether presentation of the issue is one-sided or balanced, and depending, perhaps more than anything else, on opinions about the cost of electric service.

So far this discussion has referred to how the public sees this industry, and how the public reacts to conflicting claims and counterclaims about the industry. My third subject is how people in this industry see the public, to consider ways in which we can sharpen our perception of public opinion, or ways to progressively improve the presentation of facts that are winning public approval and support.

The record you have just seen measured in the charts has been a winning record. But like some football teams, the record is magnificent defensively, but shows little progress offensively.

The success of this industry's defense against more sweeping Federal encroachment might suggest that we need to do no more. If we are winning, why change? Why do we need any sharper insight into public attitudes? And why do we need to do any better job of opposing government ownership than we are doing now?

Errors' Common Denominator

I think the answer may be that the whole problem has changed. Twenty years ago the problem was one of winning majority support to our side of the issue. But the problem now is the quite different one of trying to make that majority support effective.

Most errors in appraising public opinion seem to have a common denominator. It is the quite natural error of assuming that other people see things like we do, think as we do, are interested in the same things we are. A few examples can be mentioned:

1. One assumption is that the public is very much interested in our problems. Sometimes I am asked, what are the things about this industry that the public wants to know. The answer can just about be summed up in the two words, "almost nothing." Aside from getting good service at reasonable rates, there is certainly very little about which the public is much interested concerning this industry.

Now I don't mean to suggest at all that this lack of interest is a reason not to tell your story to the public. On the contrary it is all the more a reason why it is necessary to keep telling the industry's story, in different ways and through varied media.

2. Neither can it be assumed that the voter will be as much interested in national issues as he is in local issues. The local issue is something that he feels affects him directly or affects his friends, but the national issue is farther off.

3. The assumption that employees in this industry are well informed about its major public or governmental relations problems—to the extent that *is* assumed—may be justified in individual companies. But by and large, in the industry as a whole, such information on the part of employees cannot be assumed. There is also evidence that we have informed employees better about generalities than we have informed them about specific and more tangible reasons for supporting private ownership—reasons they can use more effectively in talking with friends or acquaintances about this industry.

Even among electric utility supervisors, there are some serious information gaps. For example, in a study of the replies by 2,500 electric utility supervisors, nearly two in every five had an exaggerated idea of the profits their companies were making, and only one in every eight gave even approximately correct answers. (Fig. 11)

Less than one-fourth of the supervisors were at all close in answering how much of the customer's dollar goes for taxes. Only one in every nine knew how much of that dollar goes for employees' wages or salaries.

While supervisors are much more inclined than nonsupervisors to express their companies' points of view on certain questions, the difference appears to be one of longer service and greater loyalty, rather than one of better information.

4. But suppose it is possible to break through the barriers of inattention or lack of interest and give people some information. It still cannot be assumed that they will act on that information in reaching the conclusions you want them to reach.

In his address last year, as President of the American Association for Public Opinion Research, George Gallup pointed out that, even after an idea has been accepted intellectually, there is normally a long time lag before it is incorporated into the thinking of those who have accepted it. As an analogy he pointed out the time lag between the acceptance of a new treatment or a new drug by medical experts and its being put to use generally by doctors, or the time lag between the successful demonstration of a new farming practice and its adoption into general use.

5. We cannot assume that a just cause will stand on its own merits, without interpreting and demonstrating those merits to the public. The Dixon-Yates controversy taught us that.

6. We cannot assume that expressed opinions are the same thing as firm convictions. Most people are now inclined to prefer private ownership in the electric power industry. But this does not mean they have firm convictions which it would be very hard to change.

7. Nor can it be assumed that opinions on an issue mean willingness to *do* anything about it, specifically or individually. The issue simply isn't important enough in people's thinking.

For example, in an analysis of letters that a group of utility employees submitted in a contest, it was found that 80 per cent mentioned the importance of telling the public the story of public vs. private ownership. But compared with that 80 per cent, only 1 per cent of these employees mentioned that they had personally ever talked with any of their friends about this subject.

8. Something that seems to cause the most frustration at times is the assumption that opinions and action are going to be consistent. I am asked why it is people will say they are for private ownership, but turn around and vote for some candidate for office who supports government ownership. I presume those same candidates feel a similar frustration. They may wonder why voters are not even consistent in their actions—not to mention consistent in their opinions and their actions. They may wonder why it is voters will support a pro-public ownership candidate, and at the same time vote against some public ownership proposal. Or why voters at the same time and place will elect two candidates who take opposite sides of the same public power issue.

Of course, the answer is that voters' decisions are based on quite a variety of both inherited and environmental influences, as well as highly complex patterns of information, misinformation, and opinions. In all this medley or mixture of influences it can be demonstrated, and has been demonstrated, that the public power issue has only slight influence, if any, upon the choice that voters make between candidates for public office.

9. Probably the commonest mistake of all is to assume that the same reasons that most influence *us* will also most influence the thinking of other people. Examples are arguments that relate to free enterprise in principle. The reason these are not more effective is simply that they have their strongest appeal to people who are already on our side. Therefore, this line of reasoning will win very few new converts.

10. Finally, a dangerous assumption is that decisions are going to stand. When a decision is made that is favorable to the industry, we have at times forgotten the importance of reinforcing the decision by building public support for it. New Johnsonville is one example of this, Dixon-Yates is another, and it would also be possible to cite further examples in local issues.

Industry's Magnificent Record

I have tried to review something of how the public views this industry—what facts the public has and what misinformation as well as gaps or areas of complete public unawareness. A second purpose has been to mention some public reactions to conflicting claims and counterclaims about the industry. I have not rung any alarm bells because there was no need to ring them. This industry has made a magnificent record in many respects—including its public relations.

But in conclusion a purpose in this talk has been to suggest a number of ways in which we perhaps need still sharper insight into public attitudes, to help us further in the presentation of facts that win public approval and support. I have suggested a possible reason why this is necessary—that our problem is no longer one of winning majority support to our side, but it is one of making that majority support effective.

Finally I have said that, splendid as this industry's record has been in building public relations, it has been primarily a defensive record. The point has been reached, I am sure, where the industry need no longer think only of defensive efforts but can consider action to regain much ground that has been lost in former years.

Sound Business Principles for Federal Power

By The Hon. Frank T. Bow
Member, United States House of Representatives (Ohio)

An address before the Twenty-Fourth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 5, 1956

I AM glad to have the opportunity to consider with you gentlemen of the Edison Electric Institute a matter to which I have recently devoted considerable study. I refer to the application of sound business principles to rates to be charged for public power, at least where sold pursuant to Section 5 of the Flood Control Act of 1944.[1]

Specifically, I propose to show that it lies within the authority, and likewise is the duty, of the executive agencies to establish Federal power rates in accordance with sound business principles; to point out that in this respect those agencies have been greatly remiss; and to examine what would be the effect of really applying sound business principles as prescribed.

In general, this matter of rates for public power has been viewed primarily from the standpoint of the consumer of the power and only to a minor extent from the standpoint of the sellers, being essentially those citizens who pay Federal taxes. In other words, the matter has been viewed from the standpoint of short-term advantage for relatively few instead of the long-term advantage of all of such citizenry.

This is largely because those who are beneficiaries of the existing discriminatory preference are so very vociferous. Rarely is a voice raised in behalf of the taxpayer. Because my state, Ohio, contributes so heavily in proportion, I am all the more inclined to analyze what is involved.

Flood Control Act of 1944

Without taking the time to go into the genesis of the policy provisions, being those in Section 5, of the Flood Control Act of 1944, I quote the vital first sentence thereof:

> "Electric power and energy generated at reservoir projects under the control of the War Department and in the opinion of the Secretary of War not required in the operation of such projects shall be delivered to the Secretary of the Interior, who shall transmit and dispose of such power and energy in such manner as to encourage the most widespread use thereof at the lowest possible *rates* to consumers *consistent with sound business principles*, the rate schedules to become effective upon confirmation and approval by the Federal Power Commission."

THE HON. FRANK T. BOW

This is the most specific and influential of the several fragmentary, and too often inconsistent, statutory statements of Federal power policy. I dip into past history only to the extent of pointing out the interesting fact that the Tennessee Valley Authority policy announced August 25, 1933, included the premise that, in its marketing of power, the controlling consideration should be that of "making power available at the lowest rate consistent with sound financial policy."[2]

The importance of the language I have quoted, from the Act of 1944, may be judged from the fact that so prominent and ardent a proponent of so-called public power as former Secretary of the Interior Harold L. Ickes used that language in his memorandum of January 3, 1946, promulgating what he stated to be "the primary objectives of the acts of Congress." Although, strictly speaking, no other Act contains just such language, Secretary Ickes cited, not merely the Flood Control Act of 1944 but also, the Tennessee Valley Authority Act of 1933, the Bonneville Act of 1937, and the Fort Peck Act of 1938 as authorities for the principle that

> "Power shall be sold at the lowest possible rates consistent with sound business principles."

The criterion established by Congress in the Act of 1944 for setting "the lowest possible rates" is neither the practice of charity, in the form of subsidies, nor discrimination between groups of citizens in respect to rates of charge for power, but rather *sound business principles*. The statute mentions nothing else.

Inasmuch as sound business principles are assumed to apply to the element of rates as set forth in Section 5, it is reasonable that the same principles should be assumed to govern in the cases of all of the other elements excepting only where and to the extent that there is an express prescription that they shall not apply. Please understand, however, that what I have to say is regardless of whether the buyer, that is the consumer, of the Federal power is or is not in the preferred classes prescribed in the same Section 5 of the Act of 1944.

Even if we were to consider that "sound business principles" shall control rates in the cases only of Army Engineer reservoir projects, there would be involved all Federal power developments in the East except those of TVA; practically all of those in the Southwest; and largely those in the Missouri Valley and the Columbia River Basin. In all, taking into account those in operation, under construction and authorized, they comprise almost two-thirds of all Federal hydroelectric power development.

Let us now examine the application

[1] (16 USC 825s).

[2] First Annual Report, p. 22.

of sound business principles to the elements entering into the fixing of rates for Federal power. I take them up in the following order:

Charges for the use of money
Amortization of investment
Allocation of cost
Tax charges
Allowances for overhead costs
Actual project income as compared with pre-construction representatations.

Charges for the Use of Money

Actually it is not a benevolent Uncle Sam or "the Government" that lends the money for the construction of Federal power projects. It is we taxpayers. The money advanced or invested in these projects comes in the main from the use of Federal income taxes, paid of course by corporations as well as individuals.

But we taxpayers are concerned also in the fact that, up to the present time, some of the funds in point have been procured by borrowings against our combined credit. Fortunately the use of this credit is growing less and less. Indeed, inasmuch as the national budget is now being balanced, present advances for the construction of these power projects are practically all from the pockets of the taxpayers.

A fundamental—a sound—business principle observed by those individuals and those banks and other institutions lending money is that the charge for the use of money shall be at least as great as the cost to the lender. Anything less would lead to bankruptcy. Moreover, the charge must cover costs of all kinds of making the money available, including overheads. For instance, in the case of a savings bank, there are the costs of gathering the savings and accounting for them; also there must be an allowance on account of loans which have "gone sour."

Total Cost to Taxpayers

What is the cost of money to the Federal government, that is, to us taxpayers? Surely it is not merely the direct charge for interest on the respective bonds, certificates or Treasury bills. The total cost must include that of the floating of the loans, including refunding where that is involved, and of all accounting.

Further, in the case of money raised by income taxation, there is the proportionate part of the cost of the tax collection system.

As to the cost of the use of money expressed in percent of the advances from the Treasury for construction: At no time has even the mere interest on the long-term Treasury borrowings averaged as low as 2 per cent; yet the Department of the Interior has used that figure, though more recently 2½ per cent. Apparently at present the Army Engineers, the marketing agencies of the Department of the Interior and the Federal Power Commission, at the instance of the Bureau of the Budget, are using a 2½ per cent rate.[3] Of course short-term money is cheaper than the long-term money which is involved; yet at present even 90-day Treasury bills yield almost 3 per cent. On long-term Federal borrowings, the interest rate exceeds 3 per cent.

Estimates of the complete cost of Federal money run from a minimum of 3½ per cent to more than 4 per cent.

Amortization of Investment

First we may look at the period or number of years allowed for paying off the loan, that is, amortization of the investment. In Section 5 of the Act of 1944, the prescription is "a reasonable number of years." The period now used by the Army Engineers is 50 years. For the Bureau of Reclamation, a minimum of 40 years is prescribed with a permissible ten-year allowance for getting under way; the minimum in actual practice becomes 50 years.

Increasingly there is pressure for the use of longer periods—60 years, 70 years, and in the cases of recent proposals, affecting power from Army Engineer projects in the Southwest, marketed by Southwestern Power Administration, a 100-year period.

Here too the matter has been viewed from the standpoint of the borrowers or beneficiaries. However, in applying sound business principles, the matter would be looked at from the standpoint of the lender. If the borrower cannot afford to meet that minimum basis of amortization and particularly that period of amortization which is sound from the standpoint of the lender, the loan is not made. Safety of the loan is the prime consideration.

After all, 50 years is a long time. The past 50 years have witnessed the almost complete disappearance of the street car and the interurban trolley; the bankruptcy of many, if not most, railroads; and a tremendous shift of population from farm to city. Most pertinent perhaps is the fact that railroad securities issued 50 years ago have in many cases suffered severely from decrease in amount and value of railroad transportation and hence necessitous reorganization proceedings.

At present we are entering the age of nuclear power. It is my understanding that such power has potentialities of ultimately attaining a cost and hence market price so low as to undercut the over-all costs of even hydroelectric power. In view of this prospect, the Power Authority of New York, in floating bonds for its St. Lawrence River power development, was forced to limit the maturity of its bonds to 40 years from the time of issuance.

Various bodies of experts, including the Engineers Joint Council and the pertinent Second Hoover Commission Task Force, have recommended an amortization period of not more than 50 years. Surely, in the light of what is facing us by way of nuclear power, a 50-year period should not be exceeded.

Method of Amortization

Turning now to the *method* of amortization, there is no prescription in the Act of 1944 or any other pertinent statute.

The present practice—initiated by the Federal agencies, not by Congress—is to use the sinking-fund method which results in equal annual payments for the sum of amortization and interest (on unamortized balances). The reasons are two-fold: convenience of the agencies and leniency to the beneficiaries, that is, the power consumers.

A basic assumption of the sinking-fund method is that the income from the power project will continue at the assumed annual rate throughout the entire period of amortization.

Under the sinking-fund method, the return of the investment into the Treasury, that is, to the taxpayers, begins at a minimum and, if all goes well, reaches its maximum in the last year of the period of pay-off. In con-

[3] Fed. Power Comm. Tech. Memo. 1, Nov. 1955, p. 34.

sequence, the lenders—the taxpayers—during their productive lifetime get the benefit of only a minor repayment of the loan. For instance, during the first half of a 50-year payout period, only about one-third is repaid.

But sound business principles require the reverse. Because of the uncertainty in respect of the future, particularly as regards nuclear power, Federal projects should "pay out" at a more rapid rate during the earlier years. In other words, the method of amortization should be one which results in a diminishing financial burden on the project as the years go on.

It seems to me that a sound business means of accomplishing this is that method of amortization which requires equal annual repayments of the Federal *investment* (not equal annual payments of the sum of amortization and interest on balances). Thus the annual interest requirement, and therefore the sum of amortization and interest, becomes less year by year.

This method results in a greater amount of amortization during the life of that generation of taxpayers which in effect has advanced the funds for constructing the project. It is to be remembered that, unlike the private investor or money lender, the Federal taxpayer is an *involuntary* investor. The former can, in general, get back the principal of his loan, or the unrepaid portion of it, by sale at any time in the open market. On the other hand, except as a Federal project during the taxpayer's lifetime makes repayment into the Treasury and thereby lowers taxes or has a corresponding effect on the national debt, the Federal taxpayers cannot recover the equivalent of any part of his contribution to the investment in the power project.

To the consumers of the power from the Federal project in turn, there would be the advantage of gradually decreasing rates for the power. Furthermore, this method of making equal annual payments in amortization of the investment, with consequent decrease in payments of interest year by year, results in a substantially smaller total payment of amortization and interest during the period of amortization than is the case under the method involving equal annual payments of amortization *plus* interest. In short, here is a method of amortization by which the investment in Federal power projects can afford with sound business principles.

Allocation of Cost

In the cases of Federal multiple-purpose projects, it is necessary to make an allocation of cost against the power purpose or function. Here I step more gingerly than with regard to some of the other elements of power costs and rates. Clearly, however, there should be allocated to power no less than is reasonable. Costs which actually belong to power should not be allocated to functions presently treated as non-reimbursable, such as flood control and navigation.

Recently there has been much clamor as regards the effect of allocation of costs upon the power rates of the Southwestern Power Administration. It has been contented that power should be charged with only its *incremental* cost, namely, the difference in cost as between a project including the power function and a project not including the power function. A Senator, presumably without thinking the matter through, has suggested that power should not be charged with any part of the costs of the dams.

Needless to say, I am not and do not claim to be an expert in this field, but I *do* know that

1. A dam and reservoir solely for flood control cannot reasonably serve also for power development.
2. If power development is to be added, the dam and reservoir must be correspondingly enlarged beyond the needs for flood control; that is, there will be much greater cost.
3. Practically the only case where power development is not chargeable with a substantial part of the cost of the dam is where there is developed the water power resulting at a dam constructed solely for navigation and constructed to a height no greater than is absolutely essential for the navigation purpose.

Surely departure from these simple propositions cannot be in accord with sound business principles.

Tax Charges

The most serious problem involved in the establishment of rates for Federal power is that of the charge to be made on account of taxes.

Under present practice, Federal commercial enterprises, such as power development, and therefore the customers of those enterprises are permitted to be free of Federal taxes and generally to be free of state and local taxes. Practically the only exception in the latter respect is that TVA makes a contribution to the state and local governments in lieu of and as a partial offset to state and local taxes. In the case of Hoover dam, the Boulder Canyon Adjustment Act of 1940 contemplates the possibility that state taxes may be imposed upon some aspect of the project; but it seems fair to say that the annual payments to the states of Arizona and Nevada, specified by statute, are not in lieu of taxes, but were provided because of other considerations.

The equity of participation in the cost of local government and governmental services is recognized in the case of the District of Columbia, to which the Federal government makes contributions which are the equivalent to payment of local taxes.

This practice has long been recognized with regard to national forests. Twenty-five per cent of national forest receipts are distributed to the counties wherein forest lands are situated, for schools and roads. This year the counties will participate in forest receipts to the extent of about $25 million.

Federal Exemption History

The exempting of Federal property and enterprises from taxes dates back as far as 1819 when the Supreme Court[4] held in effect that the sovereign, the Federal government, could not be taxed without its consent. To be sure, in those days there was no Federal income tax and the Federal government's acquisition of property outside the public domain had not reached modern proportions. Thus the practical or "sound business" aspect did not come to the fore.

At any rate, as regards Federal lands and structures, it must be recognized that taxation thereof by states or other forms of local government is subject to the consent of Congress. Nevertheless, the exemption of such Federal property from taxation has become burdensome beyond toleration. As an example, pertinent to our present subject, I need only point out that, contrary to the case of private development, Federal reservoir development means removing from local tax rolls the land to be overflowed and the improvements thereon.

It is no wonder that there is a grow-

[4] *McCulloch v. Maryland*, 4 Wheat. 316.

ing movement to require the Federal government, through local taxes on its property, to participate in supporting local governments and their services. Various bills to that effect are pending before Congress. Some would apply even to the public domain and establishments for national defense.

Federal Commercial Enterprises

As to Federal commercial enterprises, for many years the Postal Service was practically the only one—and is still the outstanding one. Unlike Federal power enterprises, the Postal Service is expressly authorized by the Constitution; it serves *all* citizens; and it serves them without discrimination as between classes of citizens. Hence the fact that the Postal Service is tax exempt has been accepted as natural.

Incidentally, as a matter of sound business, there is earnest endeavor, not merely to make the Postal Service completely self-supporting, but also to make the charges for the service equitable as between the several classes of users.

Next in order of quantitative importance are those with which we are here concerned—Federal power enterprises. I refer of course to the Federal commercial business of producing and supplying power to the public. Unlike the Postal Service, the Federal power business has no Constitutional authority; it is far from serving all citizens; indeed, it actually serves only one segment of the population. About 30 per cent of the electric power consumers of the country are served to some extent by Federal power plants. In most cases the extent to which they are so served is indeterminable; in others it is *solely* Federally-produced power which they receive.

Let us turn now to the application of sound business principles in respect to taxation of Federal power enterprises. Outstanding is the principle that all beneficiaries of the services rendered by a given kind of business shall pay their proportionate parts of the cost—plus ordinarily some return or profit, but at least their proportionate part of the cost.

The Government of the United States is business, big business, not commercial, but the biggest of all American businesses. It renders governmental service to its citizenry—*all* of its citizens.

That governmental service is paid for out of taxes, nowadays mainly income taxes. *All* of the beneficiaries of governmental service should pay their full proportionate share of those taxes. Any departure from that principle is not merely discriminatory—it is *unsound* business.

As you know, at least as well as I, each power consumer served by private companies, in paying for his power, must on the average include some 14 per cent on account of the Federal income tax which must be transmitted by all such companies to the Federal Treasury. In contrast, Federal enterprises, as we have already noted, are free from Federal income taxes. Thus some 10 per cent or so of all of the power consumers of the country are served with solely Federal power and therefore, as power consumers, they contribute nothing at all toward the cost of the Federal government. Something of the order of 20 per cent more of the nation's power consumers, as we have seen, are served partially with Federal power and therefore, as power consumers, do not pay their *full* proportionate part of the cost of Federal governmental service.

The amount of Federal tax which in this way is avoided must be made up by other Federal taxpayers, mainly by the customers of private power companies. In short, quite aside from the fact that there obviously is discrimination, here is a violation of a sound business principle.

Such violation would not be tolerated in the cases of services rendered by business concerns. For instance, insurance companies, when the rates for one class of risks do not meet the costs, either raise the rates or drop that class of risks. In fact, if sound business principle did not suffice, state insurance supervision would insist upon such action.

Similarly, in the cases of railroads: up to the limits of what the traffic will bear, passenger rates must include their proportionate share of all costs, just like freight rates. Indeed at present railroads, interests having large amounts of freight to be hauled and the Interstate Commerce Commission—all are seeking to make sure that in this respect the pertinent sound business principle is observed.

In summary, the present practice in Federal power business, so far as concerns *Federal* taxes, is inconsistent with the prescribed criterion of "sound business principles."

The same thing is true as to *state and local* taxes. In that respect, of course, any such lack of accord with sound business principles is more readily recognized. Thus in the cases of some counties, and all the more some townships, tax-free Federal reservoir projects, by reason of eliminating agriculturally productive or other lands from the local tax rolls, may impose an intolerable burden upon the local governments and those who continue to pay local taxes in order to maintain road and other services at their prior quality. I have already referred to the growing movement, including bills in Congress, requiring Federal projects, including those involving power, to pay directly or to pay the equivalent of state and other local taxes on property.

In contrast to our own practice, Great Britain, with its completely socialized British Electricity Authority and Area Boards, subjects all phases of its power property and operations to any and all taxation to which any other property or business is subject.

As concerns both Federal and local taxes, most of our Federal agencies have within the past year or two advanced in their thinking and practice to the point or requiring that, for purposes of economic evaluation and comparisons with at least non-Federal alternatives, the tax components of true cost be fully taken into account. We find this expressed in the April, 1954, agreement of the Department of the Interior, the Army Engineers, and the Federal Power Commission on cost allocation; that Commission's December, 1955, prescription for evaluating Federal power projects;[5] and the January, 1956, report by the Presidential Advisory Committee (the Cabinet Committee) on Water Resources Policy. (P. 26.)

But that procedure does not go far enough. Consistency with sound business principles requires that the corresponding taxes, costs, and charges actually be included in the *rates* for Federal power and therefore be borne in fair proportion by the *consumers* of that power. This may require action by Congress.

Allowances for Overhead Costs

Although overheads are not a major element involved in rate making, it is as clear as it is simple that sound busi-

[5] Fed. Pr. Comm. Tech. Memo. 1, Nov. 1955, p. 33.

ness principles require that the pertinent overhead costs of all kinds should be charged against Federal power projects and that the rates should be sufficient to cover those overheads. The principle needs to be applied to initial investment as well as to the annual costs of operation and maintenance.

The accounting for the initial investment should include all costs of bringing the given project into being, including the initial investigations, any explorations, and all legal services within the constructing agency.

In the initial investment and likewise in the annual costs, there should be included all associated costs of District, Division, and Washington offices. Then, there are the expenditures by other agencies, such as the Treasury, the General Accounting Office, the Postal Service, the Department of Justice for legal services and the Civil Service Commission for administration of the Retirement Act. In too many cases some, or even all, of the foregoing are not charged against the project for rate-making purposes.

In any event adequate allowances for the unforeseen, that is, allowances for mishaps and other contingencies should be included. If provision for such overhead items in detail is deemed to be too cumbersome or expensive, then at least it would seem that there should be some percentage allowance high enough to cover these overheads.

Actual Project Income as Compared with Pre-Construction Representations

No sound business would tolerate a condition whereunder pre-authorization or pre-construction estimates, predictions, or representations are forgotten as soon as they have served their purpose of helping to bring the project into the stage of authorization or actutally into being. Yet in the case of Federal projects, it is fair to say that, if not forgotten, at least such earlier estimates or representations are in general disregarded.

An outstanding example of what can and does result is the case of three projects (Wolf Creek, Dale Hollow, and Center Hill) on the Cumberland River, constructed by the Army Engineers and with the power marketed by the Department of the Interior through its Southeastern Power Administration. The Army Engineer estimate of the average annual benefits from the power of these three multiple-purpose projects totalled $11,223,000,[6] whereas the power output was sold to Tennessee Valley Authority for $3,500,000, with subsequent increase to $3,950,000.[7] That is, we Federal taxpayers are annually receiving only about one-third of what the Army Engineers estimated to be the average annual value of the output.

To be sure, a different agency, the Department of the Interior, does the marketing, whereas the Army Engineers do the constructing—and often the promoting—of the project. But the Army Engineers have no excuse for failing to recognize and point out that, up to the present and whether it be their fault or that of Interior, the financial performance of Federal power projects which they have constructed is all too often woefully below the prediction and representation.

Can it be said to be in accord with sound business principles if the promise is not performed and Departments which fail to cooperate are not forced to do so? In some cases, notably in the Southwest, the actual cost of Federal power is greater than the market can afford. In those cases the projects have been badly conceived and probably should not have been constructed at all.

Conclusion as to Rates

Let us not be so concerned with the impropriety and inequity of it all that we forget the principles involved. The fact is, at least so far as concerns Federal power projects constructed by the Army Engineers with the possible exception of including full tax charges in rates, the remedy lies within the authority—indeed the duty—of those administering Section 5 of the Act of 1944.

It is as simple as this: the plain mandate of Congress, that rates for power shall be fixed according to "sound business principles," is being disregarded. In my view this statement applies to the Army Engineers, to the Department of the Interior and its power marketing agencies, and to the Federal Power Commission.

[6] House Hearings, Army Civil Functions Approp., 1950, pp. 346-51.

[7] Annual Report, Secretary of the Interior, 1955, p. 122.

Plans Are Announced for Second Annual National Electrical Week

NATIONAL Electrical Week, promoted this year for the first time as an all-industry event, will be observed in 1957 from February 10 to 16, according to an announcement by M. E. Skinner, Chairman of the National Electrical Week Committee. Mr. Skinner is vice president of the Union Electric Co. of Missouri.

His announcement followed a meeting on May 18 in New York, N. Y., with representatives present from the following current sponsors of the observance: Air-Conditioning and Refrigeration Institute, Edison Electric Institute, International Association of Electrical Inspectors, International Association of Electrical Leagues, National Appliance and Radio-TV Dealers Association, National Association of Electrical Distributors, National Electrical Contractors Association and National Electrical Manufacturers Association.

The "Week" will be observed annually in the future during the birthday anniversary week of Thomas A. Edison, who typifies the early pioneers of the electrical industry. It is a period when all segments of the industry can join in a concerted seven-day effort to focus the attention of their own employees and the public on the importance of electricity and electrically operated equipment to the American way of life.

A "must" promotional tool to be developed and made available by the committee this year ahead of the 1957 observance will be a guide book designed to assist all branches of the industry to take full advantage of the opportunity offered by the "Week" to "sell" to the nation at large the value of their products and services, electrical safety, new developments, their plant operations and the character and spirit of their founders by way of radio, television, newspapers, magazines, and all other available media.

The "NEW" Committee has been informed that one of the high spots of next year's promotional program will be a second "Live Better Electri-

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Public Dis-Utilities

By Dr. F. A. Harper
The Foundation for Economic Education, Inc.

An address before the Twenty-Fourth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 5, 1956

I ESPECIALLY welcome this opportunity to develop a few ideas that have been lurking in the recesses of my mind for some time. Since they are especially related to the work in which you people are engaged, I should like to expose them for your critical review.

The concept of a "public utility" as it has developed in our country is what I propose to challenge. It is a concept that apparently continues to grow in favor. I propose to challenge it on grounds of our basic human rights of private ownership, and in the light of our traditional concept of private enterprise under private capitalism.

This concept of a "public utility" arises from a perversion of our traditional idea of human rights. And so it is there that we must start, because any opinion of justice must be founded on one's assumption about basic human rights.

Human Rights in Outline

A concept once traditional and rigidly observed in our Western world was the one stated clearly in the Declaration of Independence: "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are life, . . ."

Thus the first and most basic human right may be said to be:

1. *The right to life.*

Except for this right all other human rights would be unfounded. In the absence of this basic right the others would become merely sham and nonsense. Without this right the admonition against killing, in all the world's great religions, would be negated. Without this right vested in each person, there would be nothing to stop a ruler from assuming the right to sacrifice any number of human lives for his own purposes. In the words of a Communist Russian leader, it would be an unquestioned privilege of the ruling potentate to break the eggs at will in order to make a social omelet of his own personal design.

DR. F. A. HARPER

If there is the right to life, it follows that you have:

2. *The right to sustain your life*—to use your life as you will, so long as you do not violate the same right of others. The right to life assumes, in other words, your right to bend your efforts to sustain and develop both your own life and whatever else you deem worthwhile.

In working to sustain your life, you have:

3. *The right to what you produce.* This right derives its validity from the fact that life is sustained by the production of scarce things—economic things, desired beyond the available supply. Food is basic among these needs, but there are numberless other things that are also essential to a full life.

Flowing from the right to what you have produced is the right to keep it:

4. *The right to own property.* Whether you keep what you have produced for an instant or for a day or for a lifetime, under this right it is your property until you choose to do something else with it.

So the final right among this series of human rights, following in logic from the right to life, is this:

5. *The right to dispose of your property.* When you do not wish to use it yourself, you may sell it or trade it or give it away. You are beholden to nobody under this right. You may choose both the time and the terms yourself, accepting or rejecting the advice of others as you see fit.

Only a Person May Own

The only concept of ownership that is consistent with these five basic human rights is one in which ownership is strictly personal. Let us review this according to our basic human rights.

The right to life is strictly an individual, personal right. This is of necessity true because of the biological nature of life. Life is attached separately to individual persons—one life for one person, no more and no less. Neither laws of the state, nor plans of the planners, nor dream of the dreamers can make it otherwise. So the right to life, the most basic of human rights is unalterably a personal thing.

Each person among 165 million persons in the nation has the full right to his own life. His right is not limited to 1/165 millionth of his own life coupled with a right to 1/165 millionth of the life of every other person in the nation. He owns all his own life, together with his own time and its economic derivatives.

Without going through all the five rights in detail, it is clear that the personal and individual nature of the fundamental human right to life carries over into the derivative economic affairs of ownership, control, and the disposal of private property. There is no more justice in a compulsory, collective ownership or control of property than there is in a compulsory, collective ownership of life.

A further word of explanation may be needed about this matter of *common ownership*, so as to distinguish it from share ownership or part ownership.

Common ownership is not negoti-

able, because it can be neither refused nor renounced by you. It is forced upon you whether you want it or not, whether you like it or not; and you are prohibited from selling or transferring it to any other person. True, you may be allowed to exercise certain privileges such as voting on matters pertaining to this so-called common property; or you may not. But if you find yourself to be one of a minority in something you deem unwise and unwanted, you have no access to the right of disposal. You cannot defend yourself by severance of participation. Thus the presumed ownership is not, in any sense, a private matter of yours. And so it is for this reason a contradiction and a denial of your basic rights.

Share Ownership

Share ownership or part ownership, on the other hand, clearly defines what it is that you own. This is illustrated by corporate shares. The share you own is a clearly identified unit of total ownership which you may buy or sell or give away. You may do so whenever you wish and on any terms you wish to accept. This feature of negotiability or transferability is the essence of every form of ownership consistent with human rights. Except as there is this feature, it is in violation of basic human rights.

How about joint ownership and partnership in this respect? Are they not forms of ownership in common? No, these are still individualized, personal arrangements, rather than being collective in the sense of ownership in common. A person who enters into one of these arrangements does so by his own choice. He may sell his share and leave the cooperative arrangement if and when he so desires. He is not bound by any irrevocable contract—any "implied contract" imposed upon him against his will, perhaps before he was even born. So joint ownership and partnership, being personal and voluntary, are consistent with basic human rights.

Control, the Essence of Ownership

Ownership has ordinarily been associated with the holding of a legal title to anything. In identifying ownership we ordinarily ask: "Who holds the deed?" Yet this test can be a decoy of ownership, as we shall see. Under the spell of illusion, one may surrender the essence of his ownership while being hypnotized by the possession of a worthless deed.

This technique of confiscating the essence of ownership while leaving the title with the victim of the theft is, in fact, a fairly new discovery in socialist-communist methodology. In earlier times it was considered necessary, in attaining the communal political state, to acquire actual title to the property. But now it has been discovered that this is unnecessary for carrying out the socialist-communist program.

A widely accepted definition of economic socialism is: "State ownership *or control* of the means of production." It may be impossible or inadvisable for some reason to actually take title to the property. When this is the situation, the end purpose of socialism can be attained merely by arbitrary control rather than formal ownership.

Hitler's Statement

Perhaps no better brief statement of the control device for attaining a socialist state has been offered than that of Hitler—himself an important architect of national socialism in our time—who said:

> "It gives us also a special, secret pleasure to see how the people about us are unaware of what is really happening to them. They gaze fascinated at one or two familiar superficialities, such as possessions and income and rank and other outworn conceptions. As long as these are kept intact they are quite satisfied. But in the meantime they have entered a new relation; a powerful social force has caught them up. They themselves are changed. What are ownership and income to that? Why need we trouble to socialize banks and factories? We socialize human beings."[1]

Reasons for Economic Worth

The reason why autocratic control rather than formal title is the essence of ownership of many things can be seen by considering the reason for its economic worth. For many things, such as an electric plant, the advantage of using it is the only purpose of ownership. For worthless things—free goods—there is at issue no problem of ownership or control. Having no value, they are not economic considerations at all. A title to a worthless thing is not worth the paper on which to record a claim of ownership.

Worth in Use

Who, for instance, would pay anything for title to a cubic foot of air? Or to a cubic foot of sand in the Sahara Desert? Or to a cubic foot of water in the ocean?

So for productive tools it is their worth in use that underlies the value of ownership. Lacking the advantage of use, ownership would be as worthless as it is meaningless.

Essence of Ownership

It follows, then, that the power to extract from anything its economic worth becomes a means by which to confiscate all meaning and purpose of ownership. That is why control is the essence of ownership. That is why the architects of modern socialism have discovered that by controlling anything to which you hold the formal title, they can make your title worthless. And when that is the situation, it in essence becomes theirs rather than yours.

So collectivized political control makes a sham of private ownership and private rights to property. The significance of such control supersedes the title which you may still have safely stored away in your strongbox.

The Leverage of Control

To see how this matter of arbitrary control affects the essence of ownership, let us take a simple illustration.

Suppose your business is the only one of a certain type in your town. Let us say that it is a grocery store. The store and its stock of groceries are owned in your name, with good and proper title.

Now suppose that I am granted the power of control over your business. I do not actually hold title to a single can of beans. How I acquired this power is beside the present point; we shall merely say the power of control was given to me for purposes of "the public good," in order to "defend the public rights."

Now let us say that last year your annual statement of operations was as follows:

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[1] Rauschning, Hermann. *The Voice of Destruction.* New York: G. P. Putnam's Sons, 1940. pp 192-93.

	Amounts per dollar of revenues	
Total revenues, operating and other		$1.00
Deductions from revenues:		
Operating expenses: restocking	$0.51	
Taxes	0.21	
Depreciation and amortization	0.09	
Capital costs:		
Interest on loaned funds	0.05	
Dividends on stock equity	0.11	0.97
Earnings retained in the business		$0.03

Now, under my authority, if I were to force you to reduce your prices by only a few per cent, no earnings would be left for retention in the business. The same thing would happen if, in a period of inflation, I were to prohibit you from increasing your prices, at a time when your costs had risen by a few per cent.

Were I to be even more drastic in using my powers of control and were to force you to reduce your prices further (or to hold your prices constant while inflation pushed your costs up), I could easily eliminate not only your earnings for retention in the business but also all funds for a return on your investment as owner. Were I to continue to do this next year and every year thereafter, your stock would become worthless to you as private property. An earningless investment becomes a worthless investment.

It is in this way that my power of control would allow me to destroy the entire worth of your property. Though you still would be holding title to it, your title would be worthless. This illustrates how autocratic control rather than a formal title is the essence of ownership, even though control was given "for the public good," or "in the interests of society," or "to further the general welfare," or whatnot. The reason for granting the control makes no difference from this standpoint.

Control by Socialized Competition

It is possible to accomplish the same end of destroying the worth of your property by a more subtle method than arbitrarily setting your prices for you. Suppose that in the "interests of the public," or whatnot, I set up a socialized competitive grocery. This, we shall say, is justified as a "pilot grocery, by which to test the fairness of your prices." Or perhaps it is "to prohibit you from gouging the public with exorbitant profits."

By undercutting your prices only a very little bit—only a fraction of a cent—I can draw business away from you. Housewives, as they compare our prices, will begin to come to my store. A single customer added to my business and taken away from yours will spread my overhead costs thinner and cause your overhead to more heavily burden you. For this and other reasons my costs per dollar of sales will go down and yours will go up, sharply cutting into your earnings and into the worth of your property.

Realizing what is happening, you will probably cut your prices down to mine in the hope of regaining lost volume. But then I can cut mine below yours again. This can go on and on, as you vainly try to meet my prices.

By means of my competitive grocery I shall have exercised no mandate over you. I shall not have forced you to reduce your prices by any proclamation, under the authority of my control. I shall merely have induced you to do so as a "voluntary act." The voluntary aspect would be that you decided to cut prices and try to keep your volume rather than to go broke through declining sales at the higher prices.

You could not stand such competition very long because your total assets, let us say, are equal to only about three and one-half years of sales. And let us say that over half of these assets are financed by borrowed funds rather than by owner's capital. Unless you pay these bondholders and lenders their interest regularly, they can take over your business and liquidate the property. So your problem soon becomes that of where to get the funds to keep going.

A Bottomless Pit to Meet Losses

If I were an ordinary citizen using my own private funds to compete with you, I would be running the risk of depleting my own funds too, the same as you. I might be the first to suffer financial failure under the price-cutting policy I have initiated. That threat would quickly cool my ardor about forcing competitive prices further and further downward.

But in this illustration I am not an ordinary private competitor of that sort, using my own funds. I have an almost endless pit from which to draw funds for my continuing losses. Why? Because mine is a socialized grocery store. As a part of the authority by which I am empowered to control your business, I also have the right to send you a bill for the losses sustained in my socialized grocery business.

Worst Sort of Competition

This is the worst conceivable sort of competition—if, as I would deny, it can properly be called competition at all. Though I originally gained my power of control for the stated purpose of "eliminating cutthroat competition and stabilizing human welfare," mine is the power to engage in the most ruthless cutthroat competition conceivable. Whereas you must pay your own losses from your own savings, I can send you the bill for my losses too. You can be forced to pay the losses for both of us, your own and that of your "competitor." So the process really amounts to confiscation. It is not really competition at all.

The bill I send you to cover my losses appears as "taxes" in these illustrative figures I have shown. The total tax bill of twenty-one cents covers many things, among which is my bill to you for part of my losses at the cut rates I have set. Should you refuse to pay this bill, I am empowered under my authority to take over your property forthwith.

I can go on and on cutting prices, sending you successively greater and greater tax bills to cover my losses. The fact that the tax bill is already greater than the total of (1) earnings retained in your business, (2) dividends on all stocks, and (3) interest on all formal loans to help finance your operation, does not curb my authority any. No limit has been set on my power to violate your personal rights in this manner. Should you contest it in court, I have been delegated to be the final judge in the matter.

Facts, Not Fiction

The figures I have given you are not just picked out of the air of fiction to illustrate my point. They represent the combined operation of nearly all

"investor-owned" electric utility companies in the United States for 1954 —the latest figures published in this series. All except one per cent of this type of business—that of the smallest concerns—is included.[2]

For purposes of clarifying the picture they reveal, all actual amounts have been expressed in proportion to total revenues of the FPC Class A&B Companies ($7.7 billion), as though total revenues were $1.00. In other words, the relative amounts are true to fact for the composite of essentially all investor-owned electrical utility companies of the United States, with the minor exception that they include inter-company revenue.

One-fifth of the total charges to consumers for their electrical services is required to pay the tax bill of these electric utility companies. The consumer does not see this, however. He sees only a monthly bill for "electricity" rather than the one-fifth being shown as taxes—a fact about which most consumers are probably ignorant. This is really a double tax on the consumer, because when he pays his electric bill he must pay it with income remaining after paying a personal tax on it as income.

Overstated Profits

The figure I have given—14 cents of the total income dollar as net income to pay stockholders and for retaining in the business—is the figure which appears in the official reports. But I suspect these profits to be seriously overstated, even for these boom times. The reason is as follows:

The accounting practices in almost universal use fail to allow adequate depreciation for plant and equipment under the inflationary conditions that have prevailed for decades. For instance, if your yearly depreciation is on the basis of original costs and if inflation has tripled the costs of replacement, your depreciation would be understated by two-thirds of the true figure for the plant and equipment used up during the year's operation.

I have no idea how much this overstatement of profits may be in the figures I have shown. A careful accounting job on each company would be necessary to reveal the degree of error. But to illustrate, one telephone company last year showed the degree of error for its operations by publishing two financial statements—one as required under the governmental control authorities, and the other the true report as based on the method developed by Northwestern University.[3]

In this telephone company, for instance, the conventional accounting method overstated profits by about three times. The true net income was only 2.1 cents per dollar of total revenues instead of the 7.0 cents which conventional methods of reporting showed.[4]

But the precise figure is not important from the standpoint of property rights being discussed here, in connection with "public utilities." A "profit" is merely an accounting derivation designed to assist management and owners to appraise the progress of the operation. Its magnitude does not alter ownership rights, and it should never become a device for violating rights of private property. For instance, if I have produced a bushel of potatoes with my own efforts, the entire bushel of potatoes is mine by rights. If by some accounting procedure I should arrive at a figure of five cents of "profit" in its production, that five-cent proportion of the bushel is no less mine than any other part of the bushel. It is all mine, no matter what the profit calculation might show.

What Is a Public Utility?

In the light of all this, let us now appraise this popular term "public utility."

What is utility? To economists, *utility* is merely a thing desired. Or, it is something adaptable to human desire. Electricity when harnessed for our use has that quality, but it is not alone in this respect. The list of things having utility is all but endless.

What then would be a "public utility"? I suppose it should be defined as something desired by the public. And the public is merely an abstraction to describe a composite of individual persons. Who else except individual persons could desire anything?

So perhaps we should have given a prize to the ingenious gent who labored and brought forth the term "public utility,"—a prize for coining the most redundant redundancy of that year!

The reason why such a term as "public utility" came to have acceptance is that sometime in the past there arose in the garden of ideas this communal weed-notion. And it has been crowding out certain important traditional concepts in our nation. It threatens to take over, more and more, our rich heritage and to blight the origins of our economic fruitfulness. To stop its spread we must recognize it for what it really is, and apply the hoe. This weed-notion is that there is a "public"—or "society" as it is sometimes called—which somehow exists apart from the persons who comprise it. Thus it is a supra-individual concept which assumes a social whole greater than its parts as separate, cooperating individual persons. And it is this whole which has come to be assumed to have certain rights that are denied to the persons who comprise all of society; a "social good" distinct from individuals' good; a "public welfare" somehow greater than the sum of individual personal welfares.

Bases of Justice

Since we are here concerned with matters of justice, we must realize that collective justice can be only the sum of individual justices for the persons involved. And these individual justices, in turn, rest on those basic human rights that have been sketched in outline form.

Especially unfortunate have been the consequences of the invention of this phrase "public utility." It has created a whole chain of thinking which ignores its redundancy. From it has sprouted the notion of this special category of utilities—those utilities presumed to somehow apply peculiarly to the communal mass of humanity rather than to be the proper concern of persons as separate individuals. But as already explained, this concept of a communal mass is itself sheer nonsense from the standpoint of justice based on human rights. There is no such distinction between the utilities of different economic goods and services. And so, in this strange anthropology of what

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[2] Advance Release of Data for "Statistical Bulletin for the Year 1955," Number 23, Edison Electric Institute, 420 Lexington Avenue, New York 17, N. Y. May 1956. Table #42.

[3] "Business Profits — Fact or Fable?", School of Commerce, Northwestern University, Evanston, Illinois.

[4] Indiana Telephone Corporation, Annual Report to Stockholders, for the year ending December 31, 1955.

passes for thought, it seems that a redundancy has now begotten notions that seriously endanger our traditional way of economic life.

Out of this chain of notions has come the idea that it is fitting and proper for the political agent of the communal mass to either own or impose arbitrary control over these "public utilities." It is argued that the public should thus control what properly belongs to the public.

If one asks how the public ever acquired the essence of ownership rights in these things, it will be said that as "public utilities" they really always belonged to the public anyhow; that when the government gained control of the "public utilities," it was merely regaining property that had been improperly surrendered to private ownership.

Control by Owners vs. Politicians

Once arbitrary control has been vested in the communal mass rather than being left with specific persons as private property, surprising things seem to happen—surprising to those who have visualized a Utopia under ownership in common. It is not surprising, however, to "conservatives" who know that being efficient is only another term for conserving. It is not surprising to those who know that responsibility goes with private ownership as the handmaiden of efficiency.

A wise saying is this: What is everybody's business is nobody's business. And concern about efficiency under ownership in common is very close to being nobody's business. The custodian of things owned in common is not much afflicted with a sense of responsibility. The linkage is so vague, so unprecise, so confused with other influences that it fails to induce efficiency in the use of scarce things—economic things. Evidence on this point is overwhelming.

U. S. Communal Societies

In the early days of this nation, socialists like Robert Owen of England, and his visionary followers, set up scores of communal societies in the United States. Many were of religious motivations, but many were also strictly economic. Not one of them has survived. All suffered economic failure, if not failure in spirit. There must be an important reason why not a single one among all these trials was a success. Would you install a machine in your plant which had failed in every test? Yet as a nation we continue to try other forms of these same processes of ownership in common which have consistently brought economic failure when tested in pure form.

A Swedish Example

There comes to mind the instance of two iron mines in Sweden. One was started many years ago in the northland under private management; this operated with continuing efficiency as reflected in its profits. The other, started some 15 years ago, was politically managed and was designed to relieve the need of people for employment in another northland area; it has never made a profit, and last year the loss per employee was about as much as the private consumption of four average Swedish people.

In instances like these where the managers are political managers, political purposes are uppermost in their minds. It was politics which put them there, and it is politics alone which can remove them. Efficiency, being a secondary consideration, always loses the nod to political considerations. So under political management the economic efficiency can never rise above the notoriously low economy level of politics.

These experiments in communal ownership are failures because the discipline imposed upon management is not linked directly to the responsibility of personal property and private ownership. The gambler who can gamble with other people's money will be reckless indeed. If his pocketbook is refilled from the pocketbooks of others—if his own property or economic position is not endangered by his failures—he will throw efficiency to the wind and be wasteful of costs. He will act this way for the same reason we waste anything that is not scarce and therefore not valuable.

The Public Utility of Human Rights

It is highly important to note that not only the owners but others, as well, lose from inefficiency; that both owners and others gain from efficiency. The so-called profits arising from efficiency become the buying power for trades that will benefit others. A thing wasted can benefit nobody. That is why the preservation of rights of private property is so important to the general welfare. That is why there can be no real public utility except as human rights are protected from invasion, either by taking title or by gaining arbitrary control.

As has already been shown, when rights of private property are invalidated the most basic of human rights is denied. This practice invalidates the premises on which our nation was founded under the Declaration of Independence and the Constitution. And collective theft becomes validated.

Serious Charges

These are serious charges, I know. But is not a serious charge justified when the foundations of our way of life become seriously threatened? The government already owns over one-fifth of the wealth of our nation, we are told, and controls untold amounts more. If we continue to accept these notions that certain "public utilities" should be maintained under socialist-communist ownership or arbitrary control, the door is being kept open to accept at some later date precisely the same concept and processes for bread and shoes and houses. These have utility too for members of the public, as does electricity. In fact, if we were to try to array utilities, would not food be first and therefore the leading candidate for communal or political management under the concept of "public utilities?"

In closing, then, I would stress that these processes which are now so generally accepted and endorsed as justifying communal ownership or arbitrary control of "public utilities" must be recognized for what they really are — socialism or communism in sheep's attire. And in the light of human rights and human freedom, these are the processes that destroy the dignity of man and paralyze the enterprise of self-responsible persons.

It is for this reason that I would rename political ownership and arbitrary control of these services, using instead the term *public dis-utility*. For is it not an act of public disutility to destroy the value of property which has been properly acquired by private individuals? Since the public is nobody but these private individuals, there can be no public utility that is not basically private utility.

(Continued on page 222)

The Federal Budget, Expenditure Limitations and Taxation

By The Hon. Frederic R. Coudert, Jr.
Member, United States House of Representatives (N. Y.)

An address before the Twenty-Fourth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 6, 1956

A REAL hard core of seriousness pervades my address today. To begin, however, let us dream awhile.

Consider if you will that our entire national debt has been paid off—all $276 billion of it. Consider also that for years the U. S. Treasury has been "harassed" by surpluses. Wouldn't we in Congress have a field day! I mean no disrespect to this audience when I venture to predict that it could quickly whip up a plan to eliminate the surplus.

Dream Was a Reality

This impossible dream—1956 variety—was a reality 120 years ago. In this very month, June, 1836, Congress faced exactly my dream situation. The national debt had been paid off. Annual surpluses were mounting. What to do! Magnanimously, Congress voted to distribute most of the surplus to the states. A postscript is needed, however. Half a century later, the states were still suing[1] (unsuccessfully) to collect the final installment whose payment had been prevented by the Panic of 1837.

The Congress of 1956 or 1957 or any year in decades yet to come will have no problem of distributing surpluses of a debt-free Treasury. Our quarter of a trillion debt is likely to remain with us for a long time. Rather, the problem is to enact a plan to prevent a return to deficit financing and more debt. A small surplus is in prospect for the current fiscal year, but surpluses have been the exception rather than the rule. Deficits in 22 of the last 25 years are enough to cause deep concern to every disciple of sound finance. In this period, our national debt increased from $16 billion to $276 billion. In the quarter century since we started the deficit financing spree, interest on the debt has cost the taxpayers $82 billion. Interest in the coming year will raise the total to nearly $89 billion.

[1] *Ex parte Virginia*, 111 U. S. 43.

THE HON. FREDERIC R. COUDERT, JR.

The Central Thought

The central thought that I wish to put across this afternoon is the importance of writing into law an important principle of orthodox finance. I wish to require that the national budget be balanced year in and year out. Currently, there is no procedure to assure a balanced budget. We need a procedure which will limit Federal expenditures to revenues, and put an end to deficit financing and incurrence of debt, except in time of war or other grave national emergency. Congress needs a debt-preventing tool such as is available in many states. My suggestions provide that tool. The alternative is chronic deficits and the resulting inflation which ultimately will wreck our economy and system of government. I want to make sure that you and I get as much for our money when we spend it as we gave up when we saved it. I want to make sure that those patriotic citizens who bought war bonds get back in purchasing power something close to what they sacrificed when they bought them.

There are those who pooh-pooh the importance of living within income. There are others who pay only lip service to this most elementary common sense financial principle. The leaders of this Administration have been striving—and striving successfully—to restore financial soundness after years of waste and reckless spending. Our goal is in sight and we can achieve it, provided we adhere to the philosophy so well expressed by Secretary of the Treasury Humphrey a few weeks ago. He said:[2]

> "Balancing the Government's budget is not academic or simply a bookkeeping exercise. It is the very keystone of financial responsibility. In a home you can't spend continually more than you earn and not get in trouble. The same is true in a business. And, the same is even more true in Government. With the enormous debt that our Government now has it becomes a matter of extreme importance."

Achievement of budgetary balance which is assured for fiscal 1956 is, I agree, an important accomplishment. It is largely the result of a determination to hold down expenditures. But—and I do not mean to belittle the accomplishment—the balance this year, as in the only other three years of budgetary balance since 1930, is somewhat inadvertent. It is fortuitous. It results principally from an underestimation of receipts.

Achievement of Budget Balance by Law

It is my thought that a balanced budget should be the rule rather than the exception. But a continuous budget balance can be achieved only with a set of hard rules. We must make it unlawful to pay out more than we take in.

[2] Remarks before the House Post Office and Civil Service Committee on H. R. 9228, April 17, 1956. Mr. Humphrey supported legislation to reduce the postal service deficit.

Let me tell you several reasons why. The first is that we need a rule to help Members of Congress to resist pressures for spending. The actualities of politics are such that Members are extremely vulnerable to demands for spending. Further, there is always someone with a theory to rationalize any course of action, however bad. Some of these theories sound pretty silly, but as a drowning man clutches at a straw, so Congress and Congressmen will justify a course of action by reference to an economic theory which their common sense must tell them to be wrong. Let me quote from a professor who must have been the guardian angel of the deficit financers. The professor said:[3]

> ". . . there is no room for the principle of balancing the budget . . . The only reason for abiding by any principle of balancing the budget is that there is a strong prejudice in favor of such a procedure on the part of businessmen who think of the government as a business just like their own and on the part of a large section of the population in a capitalist society in whom the businessmen have been able to instil their own ideology."

This same professor also had this to say:[4]

> "The government, even if it does not want to raise the money by taxes, can always meet its obligations to any citizen by borrowing from another citizen or by printing the money to pay him. The nation cannot be thrown into a debtor's prison or debarred by a bankruptcy order from continuing its business. The weird notion of a country 'going bankrupt' because it has a great internal debt can only be explained as the result of private capitalists building up a conception of the state in their own image and impressing this capitalist mythology on the other members of the capitalist society."

Consequences of Deficit Financing

Acceptance of that kind of thinking can only lead to national disaster. You know and I know that "going bankrupt" is no "weird notion" as the professor suggests. Rather it is a very real thing. Since the days of Rome sovereigns have resorted to all sorts of trickery and financial juggling. Bankruptcy has been disguised by pretended payments in debased currency; sovereigns adulterated the coin. There is certainly a moral to be learned from the inflation suffered by Germany after World War I, in France for many years, in China, in Chile, in Brazil and other nations of the world. We can also learn a lesson from inflations at home. When we say that something is not worth a Continental we refer to the inflation in Continental bills of credit. We well recall the history of our Civil War Greenbacks which depreciated to one-third of their face value. But we don't have to go back centuries or decades or even years to learn about inflation. We see today the results of national deficits in 22 of the last 25 years. The 1956 dollar is worth only 50 cents.

I cite the future unhappy possibilities of being forced to continue to live with the fiscal policy this nation has tolerated during most of the last quarter century. Senator Bridges, in a speech advocating the long overdue discontinuance of deficit financing, foresaw the theoretical reduction of the American dollar to one-eighth of its value within 40 years. However, as he said:[5]

> ". . . there is little chance that our currency depreciation would work that way because . . ."

and then he went on to explain why and to point out the even more evil consequences. He continued:

> ". . . if history tells the truth, somewhere along the line the flood of money would burst its bounds and our entire money structure would have to be repudiated and revalued at ruinous rates."

Martial law and a dictatorship would result. They would produce directives which would supersede the normal economic relations between people and people, and people and government.

There is another philosophy or position that, in some respects, is even more dangerous than that which denies the principle of an annually-balanced budget. It is more dangerous because it is more subtle. It concedes the importance of a balanced budget as a theory, but always finds some reason why this is not the right time. The favorite argument of opponents to balancing the budget at any particular time is the alleged adverse effect on business conditions. I ask: "What kind of a weakling do they think business has become?" I ask with Senator Byrd:[6]

> ". . . Have we yielded so far to the blandishments of Federal subsidies and Government support that we have forgotten our Nation is great because of individual effort as contrasted to state paternalism?"

Let me quote again from Senator Bridges, who thinks so much along the same line as I do:[7]

> "The bottomless purse in the hands of a Socialist-minded bureaucracy is the ideal weapon with which to break down the virtues of thrift and industry and destroy the self-sufficiency and personal initiative of the people."

I wish to go a step further. Not only do I contend that business does not need an unbalanced national budget, but I think business does not wish it. Rather it wants a balanced budget. I agree with Secretary Humphrey when he recently said:[8]

> "This prosperity which is widely shared in this country today is in large part inspired and sustained by confidence in the Administration's determination and success in getting the government's financial affairs on a sounder basis."

That makes a whole lot more sense than does the belief that business wants or needs deficit spending.

The deficit financers also play another tune that has a lure which can lead us on to the rocks of financial destruction. There will be voices that belittle any fears and assure us that no dangers exist because with modern techniques we can manipulate the debt and keep it under control. Again, I cite Senator Bridges who pointed out the dangers so clearly:[9]

> ". . . there have already been proposals that deliberate inflation

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[3] Abba P. Lerner, "The Economies of Control," Macmillan (1944), pp. 318, 319.

[4] Ibid, p. 304.

[5] *Congressional Record*, July 13, 1954, v. 100, pt. 8, p. 10329.

[6] Speech to U. S. Chamber of Commerce, May 4, 1955.

[7] *Congressional Record*, July 13, 1954, v. 100, pt. 8, p. 10330.

[8] Remarks before the House Post Office and Civil Service Committee on H. R. 9228, April 17, 1956.

[9] *Congressional Record*, July 13, 1954, v. 100, pt. 8, p. 10329.

at a predetermined rate would be a good thing for the country because of the tested and proved methods of keeping the inflationary mechanism under precise control."

And with him I agree when he concluded:

". . . We must not put our trust in any scheme involving the manipulation of money. For national stability and safety, there is no substitute for a balanced budget."

Lack of Congressional Spending Controls

To make sure that we don't get detoured from the road that leads to a balanced budget, we need positive action, preferably a constitutional amendment. At the minimum, we need a statute which limits expenditures by the Federal government to the sums which the taxpayers are able and willing to contribute to the support of their government. Existing practices and controls do not control at all. Once the President has submitted his budget message, Congress never again sees the appropriation picture as a whole until after all the appropriations are enacted. Immediately after receiving the budget, Congress splits the President's requests into a dozen or more bills. Then it proceeds to consider them separately over a period of six months. We appropriate item by item, so that not even the most devoted economy-minded Congressman can understand or really know what the final over-all picture will be until the last dollar is voted, and then it is too late. There is never a real opportunity—and I emphasize this—there is never a real opportunity during the process of enacting appropriations to consider intelligently what total expenditures will be in relation to revenue.

Let me illustrate another way in which Congress lacks effective control of the budget. It is a fact that from one-fourth to one-third of current spending results from appropriations made years ago, but which remain unspent. Congress thus has little to say about $15-20 billion of current spending. Three years ago, the backlog of unspent funds accumulated by governmental agencies totaled almost $80 billion. It is hoped by the end of fiscal 1956 to reduce this backlog to $50 billion, but this is still tremendous. Add to these sums debt interest which must be paid, pensions which we are obligated to meet, matching funds guaranteed to the states, etc., and you have another $16.5 billion of fixed charges beyond control.

If we establish the principle that tax receipts shall determine expenditure levels, we will restore Congressional control of expenditures because we can control taxation. People will defend themselves against taxation in a way which they are unable to do on an item-by-item appropriation process, where the pressure groups and special interests are so often unbeatable. So long as we continue the power to borrow and go into debt, we make for irresponsibility in government. Take away that power, and we can expect a greater responsibility.

I am very serious when I say that Congress needs a protection against pressure groups. And my proposals help provide just that. So often the pressure group which one day pushes us to spend, the next day pushes us to reduce taxes. If we had an over-all expenditure ceiling we would then be in a position of saying "That is all there is, there isn't any more. If you want us to vote for larger appropriations or for new or bigger projects, you must recommend publicly what taxes you want to vote for and have your people tell us to vote for higher taxes."

Mechanics of the Proposal

The mechanics of my proposal for insuring that expenditures shall not exceed revenues are very simple. Controls will operate at three points. The first one comes with the budget itself, by requiring the President to submit a balanced budget. The second control operates upon the Congress in forbidding the enactment of appropriations in excess of estimated revenue. Finally, notwithstanding any obligational authority granted, or appropriations made by Congress, the President shall take such action as may be necessary to insure compliance with the budget balance requirement. This three-point control will mean real control and with it we can consider deficit financing a thing of the past, or at least largely a thing of the past.

The American people have become so conditioned to deficit financing and its apologists that many will instinctively question my strict limitations. These people will fear a possible impairment of the defense effort. I have two answers. The first is that any defense based on an inflationary economy, resulting from continued budget deficits and a continuing declining dollar, is a defense based on sand. Financial soundness, a defense based on a balanced budget, with taxes that the people can bear over a period without diminishing their incentive, their initiative, and their ultimate productive power, is a real defense. It is the only defense that we have any right to rely upon in the present circumstances.

However, I don't wish to overlook the possibility that under some circumstances there may be a necessity for expenditures that cannot be matched immediately with revenues. To care for that special situation I would allow the incurrence of deficits under two sets of circumstances: (1) in time of war declared by Congress; and (2) during a period of grave national emergency declared in Congress by a concurrent resolution accepted in both Houses by a two-thirds vote of the authorized membership. Hence, except in time of war and grave national emergency, we will guarantee to the nation a balanced budget. What a tremendous boon and source of confidence that should be to business and all those who make investment decisions, and all others who look to security for their savings and for protecting the purchasing power of their retirement benefits!

I should add that our present "emergency" is no emergency at all for purposes of unbalancing the budget. The problem of an expensive national defense is here to stay, and we must learn how to cope with it financially on a pay-as-you-go basis.

Tax Reduction and Debt Reduction

You may want to know what I think about tax reduction and debt reduction at this time. Let me say this. President Eisenhower and Secretary Humphrey are quite within their rights when they urge caution in seeking tax reductions based on estimates of what the Treasury surplus is going to be this fiscal year. They both have too much responsibility to set about disposing of something they do not yet have. They urge that whatever surplus we have should be devoted to retirement of some of our debt, and that is good. We should make a token reduction in the debt at least to keep alive recognition of the tremendous burden we face there. The President and the Treasury can

(*Continued on page* 210)

HOUSEPOWER Presentation

THE objectives, progress, and future of the industry's HOUSEPOWER program were discussed at the third general session of the 24th annual EEI Convention.

Dave Garroway, national television commentator and star of NBC's current events program "TODAY," headlined the one-hour presentation of the multi-million dollar rewiring program. Supporting Mr. Garroway were Miss Lee Merriweather and a group of leading executives of the electric industry.

Program Objectives

Among the electric industry executives who spoke was Harry Restofski, Vice President of West Penn Power Co., who outlined the objectives and basic elements of the HOUSEPOWER program. Through a combined slide-film presentation, Mr. Restofski said that the program objectives are:

1. To mass educate homeowners on rewiring.
2. To stimulate customer action and get at least 20 million homes rewired in the next ten years.
3. To assist and support other programs having the same objectives. He further stated that the program will be promoted through consistent advertising in *Better Homes & Gardens* Magazine, national television programs such as "TODAY" and "HOME," coordinated local advertising support, and a $100,000 "How's Your HOUSEPOWER" Contest.

DAVE GARROWAY

Industry Speakers

Other executives of the electric industry elaborated on the points brought out by Mr. Restofski. Those who spoke on the matter were: Carl T. Bremicker, Vice President of Northern States Power Co. and Chairman of the National Adequate Wiring Bureau; Paul D. Brooks, Vice President of American Gas and Electric Service Corp.; E. O. George, Manager of Sales, The Detroit Edison Co., and George Ousler, Vice President of Duquesne Light Co.

Other Participants

Explaining how additional industry support will help the HOUSEPOWER program were: P. Howard Farley, Business Development Director of the National Electrical Contractors Association; Ken Lydic of Owens-Corning Fiberglas Corp.; Walter Eichelberger of Philco; R. Bolin of Westinghouse; W. V. O'Brien of General Electric; Robert Smith of U. S. Steel; E. S. Rising of Kennecott Wire & Cable Co., and J. F. Miller of the National Electrical Manufacturers Association.

The final climax of the discussion came when Dave Garroway told how he thinks his T. V. "TODAY" show will help the HOUSEPOWER program. Mr. Garroway called upon Miss Lee Merriweather of his "TODAY" show to assist him in addressing the group.

Positive Thinking, Action Mark Convention

(Continued from page 168)

Bendel, famous New York couturier, at the Warner Theatre on the boardwalk.

The industry's highest honor, the Charles A. Coffin Award, was presented to The Washington Water Power Co. at ceremonies at the Warner Theatre on Wednesday evening. Presentation of the award was made by Ralph M. Cordiner, President of the General Electric Company. Kinsey M. Robinson, President of Washington Water Power, received the award on behalf of his company.

The Convention entertainment was concluded with a delightful program of music and comedy immediately following the Coffin Award ceremonies. "A Rhapsody in Red, White, and Blue" was the theme of the program which featured Paul Whiteman and his orchestra, with Buddy Weed at the piano, Miss Patrice Munsel, and Jonathan Winters. Miss Betty Furness served as the mistress of ceremonies for this excellent program, arranged through the courtesy of Westinghouse Electric Corp.

Acknowledgments

At the closing session, Mr. Branch expressed grateful acknowledgment to Westinghouse for the wonderful evening of entertainment. He gave special thanks, too, to the Atlantic City Electric Co., many of whose staff worked tirelessly to assure a successful Convention. *Electrical World* was given special recognition for their usual fine job of publishing the *Unconventional Daily*, a vital means of communicating news of people and events, which has come to be appreciated by all who attend the event.

IPCEA Broadens Field, Adds Two New Sections

THE Insulated Power Cable Engineers Association (IPCEA), which has since 1925 developed standards for many types of insulated power cable, recently announced a broadening of its field of activities by the addition of two new sections, namely Communication Cable and Bare and Covered Overhead Conductors.

The latter section is concerned with the consideration of all matters in which the dominant factors are the design, construction, and application of bare and overhead conductors used in the transmission and distribution of electric power. Included in its scope are Sag-Tension Charts, Conductor Application Data, Current Carrying Capacities, Conductor Design, Code Names, and Reels.

The address of the IPCEA Secretary is 283 Valley Rd., Montclair, N. J.

Service Responsibilities of the Future

By B. L. England
President, Atlantic City Electric Company

An address before the Twenty-Fourth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 5, 1956

IT IS always a pleasure for me to participate in a convention program of the Edison Electric Institute, because with you I have a feeling of taking part in the greatest adventure of our time. As many of you know, I have been connected with the electric power industry since 1922. Like you, I have been amazed and delighted as I watched —and participated in—its spectacular growth since that day.

It has truly been a period of astonishing expansion — greater perhaps than many of us realize. In 1926, which was four years after I first joined the Atlantic City Electric Co. and the first year for which we have really useful figures, the total installed capacity of all the power systems and companies in the whole United States was only 23,386,000 kilowatts. The total power production of the country in that year was only a little over 69 billion kilowatthours.

Edison Saw Great Future

It was in this same room in 1929 when this Convention Hall was officially opened by our industry in convention that Thomas Alva Edison said:

> "I am proud of the electrical industry — of its vision, courage, zeal, and devotion to public service; and I suspect every American feels the same way about it. It is a great reward for me and Marconi and co-workers, many of them still living, that we have survived to see the fruits of our labor. The record is wonderful; but, fine as it is, it can be made still better and I have a feeling that in your hands it will be."

He could see the great future, but I wonder what he would say today of our tremendous expansion and with it the great service to mankind.

In 1934, five years after Edison spoke, the installed capacity had increased to 34,000,000 kw, and the production to about 87 billion kwhr —a gain, respectively, of about 10¾ million kw, and 18 billion kwhr. As I remember it, we were even then congratulating ourselves on the rapid growth of our industry, and wondering how long such enormous progress could be maintained.

B. L. ENGLAND

Real Growth Only Begun

But the real growth had only begun. In the decade from 1934 to 1944 the industry added 15 million kw of capacity, and production rose more than two and one-half times, to more than 228 billion kwhr. In the next decade, ending in 1954, the installed capacity of the industry doubled, to 102½ million kw, and production somewhat more than doubled, to 471½ billion kwhr.

At intervals all along the line there were exclamations of amazement and predictions by some that this rate of growth could not much longer continue. But the industry went grandly ahead to belie all the predictions of the fainthearted—and to outrun even the forecasts of the most optimistic. As you all know, the installed capacity of the industry at the end of 1955 was 120 million kw, or nearly six times what it was in 1926. The production in 1955 was 545 billion kwhr, or eight times the output of the industry in 1926.

The expansion not only is continuing but the rate itself is still increasing. There are some companies predicting a doubling again in the next five years—or at least in the next ten.

It seems safe to say that the output of the country's power plants by 1970 will be well in excess of one trillion kilowatthours.

End Nowhere in Sight

So it goes, and the end of all this development is truly nowhere in sight. Almost every day we hear of new electric appliances that will be at work in the home of the '60's; of the fully electrified farms of the future, of the many, many new uses everywhere for the universal service —electricity. We will with certainty, have a "Live Better Electrically" era.

Added to all the others, we now hear increasingly of the automation of industry and business. Electricity already does more than 95 per cent of all the work in the average factory, and in some it does as much as 99 per cent. Yet electrically-operated automation may make it possible to turn out products for a goods-hungry world at an ever faster pace, with no labor at all in many instances, and with the very machines themselves taking the place of supervision as well as muscle, freeing men from the tedium as well as the labor of production. In such automated industries and businesses, electricity will certainly be king, for without it no automation could work. Electric power is, of course, the indispensable part of all electronically-operated devices.

We have certainly been successful in selling our product — electric power. The American people have taken electricity wholeheartedly into their homes, their businesses, their factories, their communities, their farms—into their very lives.

We can, I think, justifiably pause for a moment to congratulate ourselves on being part of such a great and successful adventure, in bringing about within a single lifetime such a revolution in the ways of doing things as literally to change the face of America. But only for a moment can we indulge in this pleasant self-congratulation—a moment only, and no more.

For there is, unfortunately, another side to this picture—and it is this side that I want to examine with you in some detail today.

When electricity first was introduced to the nation, more than 50 years ago, it was an oddity to most, a luxury to a few, a necessity to none. People bought it for its convenience, and few cared in those days if the service was off, except at night when it was depended upon for lighting.

Role Has Changed

But as the values of electric power in industry, in the community, in the home, and on the farm were more and more realized, the role of electric power in our lives subtly—and rapidly — changed. Gone was the time when it was merely an adjunct to other services, or a pleasing alternative. People began increasingly to rely upon electricity, purchase equipment that would not work without its power, and to develop manufacturing and other processes that not only were dependent upon electric current, but which could be faced with ruin should that power cease for any appreciable time.

Transportation, water supply, communications, fire protection, sewage treatment and disposal, refrigeration and food preservation, entertainment—the very life, the very safety of America, today depends upon a constant and uninterrupted flow of electricity.

Imagine what happens to production in a modern factory when the power goes off! Everything stops, of course. Furnaces cool, intricate processes go out of kilter; the loss in production and in actual damage may mount enormously, even during a short outage.

In some kinds of plants, for example, chemical works and metal reduction plants, a stoppage of the current may be so serious as to approach the proportions of disaster. It cannot be tolerated.

Even worse, under certain circumstances, might be a stoppage of power in a large community, where water supply, sewage handling, traffic control, and other civic services would immediately cease to operate. The elevators in tall buildings would become useless and, therefore, the buildings themselves. Especially vulnerable are hospitals, with their electricity lighted, electrically operated services, including those of the operating room. Deprived of power, the modern city would become chaotic—utterly impossible to live in. The same is true of many a smaller city and town.

Dependence of Modern Home

Almost all the communities are increasingly dependent upon electric service, but it is the modern home that I chiefly think about. Here the reliability of electric service can seriously affect not only the comfort, but the very lives, of our people.

The average home, both urban and rural, already has enough electrical equipment so that a power failure can be a very serious experience indeed. Most of us have had the misfortune of experiencing a power failure in winter in our homes or those of friends, as a result of storms or other difficulty. Of course, the heat immediately goes off—even if it isn't electrical.

Simultaneously the refrigerator and the food freezer cease to operate, and there is possible danger of food loss or spoilage. Of course, there are no lights either, and the average home these days is so used to relying on dependable electricity it usually doesn't even have flashlights or candles on hand, should a power outage occur.

Almost one-half the homes also depend on electricity for cooking, and if the power goes off, haven't even an old-fashioned fireplace in which to heat a kettle. For that matter, many of today's housewives, never having seen it done, would probably not know how to heat water, let alone do any cooking, over an open fire. And, of course, the washing machine won't work, and neither will the dryer. Even the household radio quits; there is no news and no weather forecasts—and the television set won't even deliver a commercial.

So now we have the family of the electrical age—which has been so thoroughly sold on dependable, convenient, clean, safe electricity—flat on its back should there be any failure of that power over any appreciable period of time. It is a situation such as to give our industry pause. For every man in the electrical industry who has contributed to the selling of electricity to our people with such phenomenal success has also accepted, tacitly, the responsibility of supplying that power regularly, dependably, and without fail. It is a responsibility of such magnitude as few other industries in history have been called upon to accept. We have no choice but to discharge it faithfully—because the stakes, both for ourselves and our nation, are high indeed—perhaps higher than we think.

The All-Electric Home

Today, the all-electric home is on the horizon of reality. In the near future we may expect to make saturation studies of all-electrical homes similar to those we now make for ranges, refrigerators, and water heaters.

We are looking toward an all-electric home equipped with heat pump and requiring the power company to supply something of the order of 25,000 kwhr per year. The industry has launched the "Live Better . . . Electrically" program, and the HOUSEPOWER campaign for 1956, directed toward all-electric living, and a conscious effort to install adequate wiring with adequate convenience outlets and full utilization of electric service.

We have sponsored this dependence on electric service because we in the electrical industry believe that complete electric service is one of the demonstrable economic indicators of the success of our way of life. The increasing desire for free time for relaxation, for healthful play, and for intellectual development mean an ever-growing demand for the substitution of non-interruptible service for manual performance of chores. The era of unlimited hours of household work per week has passed. The transfer of the work burden from servant to housewife,

through the drying up of the domestic servant labor pool, has stimulated the development of a magnificent array of well-engineered and esthetically-designed household appliances, which do a better job, more quickly, at lower cost, and with less physical effort, than all the dull labors performed by the housewife and her servants in an earlier day.

Integrates Use of Appliances

The modern home now appearing in increasing numbers all across the country has been designed to integrate the economical use of these appliances — and the all-electric home literally means just that. All-year air-conditioning, lighting, cooking, cleaning, communicating, time keeping, water-pumping, and a host of other services and facilities are today totally dependent on electric service.

But the much-celebrated all-electric house obviously is completely unlivable without electric service. But this is by no means the whole story, so far as our responsibility is concerned. Many compact urban and suburban communities are wholly dependent on continuous electric service for their high-speed rail transportation. The advent of the giant shopping centers has been heralded as a great spur to modern living by reducing the amount of time needed to replenish household supplies. Once created, the community becomes utterly dependent on such a center, and here again, interruption of electric service is completely unacceptable.

New Patterns of Life

Thus we see that electricity has not only replaced earlier forms of service, but like the automobile, it has created entirely new patterns of life for families, communities, business, and industry. These new patterns are wholly dependent upon electric service. Life in such homes and communities could not be carried on merely by reverting to older ways of going about the tasks of life. In this electrical age we have only one way to go, and that is toward the production and use of greater and greater amounts of power, and the development of the nearest possible thing to absolute reliability.

Now this, of course, is no new thought in our industry. Reliability of service has been a goal toward which we have been moving for many years. Progress has been outstanding. But the rate of progress in the production and use of electric power, in my opinion, has been somewhat faster than our advances in reliability.

Reliability: A Major Goal

In that direction lies danger. The time has come to make reliability a major goal of all our development.

Because ours is a technical industry, it is not surprising that it is in the technical areas that we have made the proper progress in reliability, as well as in efficiency and economy.

A great deal of attention has been centered on improving the design and reliability of generating stations. The general direction has been to increase the automaticity of the stations, thereby producing a number of reliability advantages. Automatic controls not only tend to increase efficiency of generation, but to assure its continuity by anticipating troubles before they occur, and making automatic adjustments that keep the system operating smoothly. Automatic devices have also acted to reduce reliance on human observation and judgment, and this has not only removed some of the human fallibility factor from the system, but it has also reduced the number of employees per station and increased the installed capacity per employee. This in turn has minimized the problems of coordinating so many people.

In addition to these steps, the reliability of the individual components of the newer generating plants is high, and getting higher. Generator or boiler failures, after the initial breaking-in and settling-down period, are rare and getting rarer, in spite of the increasing size and energy output. In power plant situations where reliability is vital, often the components are paired to make sure that satisfactory operation of the station will continue even though one or more of the components is down for inspection, repair, or overhaul.

I think it is safe to say that, as things stand today, the generating plants are the most reliable portion of our national electrical power system. It is to be hoped that, as atomic power comes into use, even greater reliability will result from such installations. I think it not too much to expect that ultimately the generating plant will become so highly organized, so sturdily and simply built, and so nearly automatic that aside from disaster brought upon it from the outside, such as destruction in war, the generating station will have so high a degree of reliability it can virtually be dismissed as a possible cause of power failure. At least, this is a goal for which we must earnestly strive.

T & D Troubles

It is the transmission and distribution of power these days that most frequently gets us into trouble. Naturally, this being the part of the system most exposed to the elements, transmission and distribution may always be the weak link in the continuity of electric service.

It need hardly be pointed out that great strides have been made in recent years in assuring more reliable performance of our transmission systems. Since the first interconnection, we have made steady progress in the design of cable, poles and towers, and in all the apparatus required to make the transmission system work. We have enormously improved switching, relays, high-speed circuit interruption in faults, and rapid reclosing. As transmission voltages have climbed ever higher, more and more study has been given to the appurtenance of transmission. Yet greater reliability is still possible, and we must strive for it.

Bad Weather and Storm

The great enemy of fully reliable transmission, as well as distribution, is bad weather and storm.

Weather is a problem that varies, naturally, in different parts of the country. Snow, ice, and sleet predominate in the central and northern latitudes of the country, wind and water in the southeast, heat, aridity, and wind in the southwest, and other problems characteristic of other regions. Certainly the progress we have made against some of these difficulties has been dramatic indeed—as witness of techniques of

ice detection and melting by means of carrier current and temporary overvoltage. What was once considered the bane even of short lines, and an absolute barrier to longer ones, has now been reduced to a manageable problem, amendable to nearly automatic control—a triumph of modern technology. There was once a time when the only known way to deal with ice on transmission lines was to send men out to beat it off the wires with clubs. Imagine trying to manage the icing problem on a modern long-distance high-voltage transmission line by any such means as that! Yet in spite of all our modern technology, ice, wind, and storm still produce their havoc —and we have not won this battle yet.

Lightning Headaches

Lightning also has produced its share of headaches for the power systems of the country. Yet lightning today has lost much of its ability to interrupt service. We have seen such progress in lightning control as would not have seemed possible to the pioneers of electric service a generation ago. Yet on the whole there still remain many miles of transmission lines in the country that are not as fully protected as we now know how to protect them. Time and money will be required for this, and the realization of how important the step inevitably will be to the ever larger application of electric power in this country. While we are heavily engaged in trying to build power plants fast enough to keep up with the demand, and transmission lines to get the power to the customers as rapidly as the load growth requires, we must not forget that reliability must also be built into every generating station and every transmission line. In the long run, our industry and the safety of our customers may depend on it.

Even more vulnerable than transmission to storm, accident, and other causes of outages is the distribution system. In fact, it would appear that the closer we get to the home of the ultimate user, the greater is the number and variety of the troubles that can result in power failure. In the distribution system the forces of the elements are often augmented by the forces of man to destroy continuity of service, and many are the ways in which the unexpected and the accidental can combine to disturb performance.

There are not only wind, water, ice, and fire — but there are also trees, small boys with rifles and kites, the pileated woodpecker, and the pole-oriented auto or truck.

Other Troublemakers

One of the most mysterious enemies of the distribution system that we may behold in our land is that pole-hunting automobile or truck, and in many localities it would appear that the problem will have to be solved in some other way than merely by moving the pole lines back from the highway right-of-way. The poor utility pole appears to be pursued as a target no matter how far back it is set—and in many areas the poles are struck with what seems like almost statistical regularity.

The worm, the decay-producing bacterium, fire, and the woodpecker also combine to make the pole problem a serious one. Some of our colleagues are now experimenting with poles of plastic or glass fiber in an attempt to frustrate some of these enemies—we hope with success.

Underground Distribution Systems

A solution that has often been suggested for the distribution system's ills is to put it underground; but any utility operator who has had experience with underground systems, can tell you that isn't the whole answer, either. It may be a partial solution to sleet and wind problems, but it does not answer the problem of floods. Isolation of faults and clearing up of troubles are expensive and time-consuming in the underground supply, despite network protectors. The underground system is difficult and costly to maintain, to say nothing of installation costs.

The demand for underground distribution was given much new force after the 1955 floods in the eastern and northeastern areas, on theory that such underground systems would be the answer to service interruption. But of course this is primarily a popular and uninformed idea —and the result of wholesale putting lines underground would inevitably be higher fixed charges and operating expenses, necessarily resulting in increased rates—and in most cases freedom from service interruptions would not be noticeably improved. Only where a community has an aesthetic problem, due to dense concentration of people and loads, can the underground system be contemplated, in my opinion, and there it should be on a contributory basis, leaving the rate structure intact for progressive improvement and ever-present invitation for increased electrical living.

The answer to distribution system reliability is not underground; it lies in greatly improving the overhead distribution system itself, with bold and major redesign. New structural and electrical designs are required.

Interior Wiring Ills

Finally, we have to face another serious weakness in the chain of facilities between the generator and the household appliance. This is the interior wiring of our customers' homes. The telephone industry long ago solved this problem by owning and installing all of the equipment from the exchange to the telephone instrument on the customer's hall table. Our industry elected a different path, and I am pretty sure myself that it is certainly the correct path.

We do not want to own the wiring in our customers' homes. We do not want to undo the well-established patterns of our customer relations, in which facility ownership by the utility company ends at the building line, excepting for metering devices and meters. But we do suffer from the inadequacy of wiring, the poor quality of the interior layout, and the growing tendency toward "do-it-yourself" installations fostered by cheap electrical gadgets of all types, available on the counters of stores.

Interrupted service is just as devastating to the customer whether the failure is the fault of his house wiring, or whether it results from a truck-demolished pole on which the local transformer was mounted. We get the blame for inadequate wiring and for service failure, even though we are not responsible. And somehow, we must find a way to accept the challenge that this implies, and help the customer to help himself.

Hence the industry's long-continued, and now intensified "better wiring" campaigns — sparked currently by the HOUSEPOWER program.

In this matter, it seems to me our job is first to insist on a minimum capacity service entrance of 100 amperes. Next, we should insist on a service drop of at least three No. 2 wires, and interior wire sizes well above the minimum code requirements, most of which are geared to fire prevention and not to all-electrical living. Some electrical contractors and their substandard installations should meet the full force of our disapproval. We must underwrite, promote, and create a demand for Red Seal wiring. I think these steps are necessary if we are to overcome the potential failures of the weakest link in our modern electrical systems, the wiring in home and on the premises of our customers.

Human Arrangements

So much for the strictly technical and apparatus safeguards which we have developed, or can develop, for safeguarding reliability. We come now to the area of human arrangements, and these are of the utmost importance, for no matter how perfect our machines and equipment may be, they still require people to design, build, install, operate, and maintain them. No matter how nearly automatic we may make the system, through good design and the modern uses of electronics, the human link is bound in the long run to be the most important of all, and nobody as yet knows how to make a man completely and fully automatic.

We must consider, first, what each individual company can do to assure the human side of service continuity, and then what we can and should be doing in the industry as a whole.

On the company level, it seems to me that at least five areas should be the constant concern of management, so far as the human or organizational side of service continuity goes.

Pre-Planning

The first of these is pre-planning. Every company should have complete plans for action in every type of foreseeable emergency, ranging all the way from a broken house supply wire to a major hurricane or other natural disaster. The plans should also, of course, include what to do in case of major equipment breakdown. As you will recall, prearranged schedules and procedures, to be followed immediately on the occurrence of a major equipment failure, proved to be most singularly successful in the case of a recent turbine explosion. Service was restored speedily, property and equipment was saved, and loss of life prevented, by the care and forethought of those who developed a plan they had expected—and hoped —would never be used. The plan worked even better incidentally than its creators had even hoped.

Now, the formulation of such plans requires much study and thought. It is tedious and seemingly unrewarding, and so it is all too often neglected. Even after the plans are made, they will do no good if merely locked away in a drawer with a sense of satisfaction. The essence of a power failure or disaster plan is that it must be well understood by all who are to participate in it. It must be the subject not only of reading and discussion, but of actual drill, so that when the emergency comes there will be no question of trying to remember who is to do what, and when. It should be a matter of putting promptly into action a well-thought-through pattern, undertaken without hesitation or faltering.

Most companies now have such plans but there are instances where there has not been, as yet, a coordination on an area basis.

Develop a Team

Second, to operate such plans, and also to keep its day-by-day operations in first-class condition, each company needs to expend every effort to develop a team of employees that is service-conscious — an employee team that is at all times trained, willing, and able to see to it that the customer gets service without interruption. These must be not only *good* people, in the sense that they are intelligent, reliable, and able at their regular jobs. They must also have the kind of dedication to the job expected of railway enginemen and signalmen—or perhaps the kind of devotion to duty exhibited by the old-fashioned country doctor. Employee morale of this sort may well be one of our most important bulwarks against service failure. Developing and maintaining it is bound to be a major consideration of management.

Best Equipment and Methods

Third, it goes almost without saying that the best service equipment and methods must be made available to the company's people, and there must be constant effort to keep equipment and methods up-to-date and further improve them. Such items as radio-controlled service cars and trucks, equipment and techniques for handling repairs on hot lines without interruption, and the like, must become routine in the small as well as large companies—not just a matter for spectacular demonstration or occasional use, but as a routine of business—a tool. Equipment that is useful in detecting the likelihood of trouble before it happens, too, should be increasingly developed and used, such as the methods now being experimented with by some of our friends, of using infra-red pyrometers to detect bad splices on cables before they fail.

Up-to-Date Statistics, Data

Fourth, complete statistical maps and other data of the entire system should always be on hand, and kept up-to-date, to facilitate finding the source and cause of troubles when they do occur. All calls reporting trouble should be answered promptly and intelligently no matter where they are, or when they occur. It should be our rule that any outage is potentially a major disaster, at least for that customer, and should be dealt with accordingly.

Avoid Labor Troubles

Fifth, we must so manage our business that outages never occur because of labor troubles. This means that whenever necessary economic adjustments are made, as they must be from time to time, they will be so handled in an atmosphere of peace and mutual trust instead of conflict. This is a two-way responsibility; one which demands that there be no intransigence on the part either of management or unions, that all negotiations and bargains con-

tain no black-and-white choices. It means that the people who man our facilities, while recognizing their economic power to strike, will nevertheless not use a weapon which, like the atomic bomb, extinguishes friend and foe indiscriminately. Appeals to force by either management or labor should be considered a primitive and obsolete way of reaching a solution. The public as customers must be reassured that such a modern approach has been adopted by our employees and our managements; one which views the interruption of service as unthinkable, and is able to agree peaceably.

A National Problem

Finally, we need to view service reliability as a national problem, and see what can be done by the whole industry to further and assure it.

The value of working together has been most adequately shown in a number of ways but most especially in the mutual help provided by some companies to others in the disastrous recent floods and hurricanes in the northeast and far west. The success of these cooperative arrangements indicates a growing need for an industry-wide mutual aid pool, on a national scale. What has been done in the past through friendship and sympathy ought now to be organized on some dependable, business-like basis, to assure prompt, willing, and trained help when it is needed by any company or group of companies caught in a major disaster; help that will be forthcoming rapidly, and for as long as required.

Finally, it seems to me we have reached the point in history where we must do away with all the hampering results of parochialism in power. We must now interconnect our lines across the nation, bringing into being the economy and reliability of a national grid—an integrated national or even international power supply, forgetting state borders, the confines of particular regions—creating for reliability in peace and war a national network of power that can combine the resources of the nation, if need be, to cope with almost any emergency from wind, ice, storm, to the actions of an enemy.

The reliability of electric service must become so assured that no customer, anywhere, need fear that the equipment with which he operates his home, his health services, his place of business, his community, his plant, or the facilities bearing on his nation's safety, will ever falter for want of power.

The demands of economy and efficiency we still must heed, of course, as in the past, but equally important now, I think, we must place reliability in the trilogy—so that as our industry moves ahead into ever greater opportunities, the three march on together; economy to keep down the cost, efficiency to conserve the nation's resources, reliability to assure the customer that he can—as many times he does—bet his life on the dependability of electric service.

The Federal Budget: Expenditure Limitations and Taxation

(*Continued from page* 203)

understandably justify their position on the quite generally accepted philosophy that in good times we should pay off the accumulated deficits of the war and depression years. They can also defend their position on the political theory that any tax cuts that the Congress might enact now would be of the wrong variety. With an election in the offing, tax cuts might well take the form of purchasing political security instead of promoting economic security. But I should add at least this much.

The tax burden currently imposed is indeed a paralyzing one. We cannot carry it indefinitely without sapping the very foundation of our American economy and our American Republic. Tax reduction is warranted in a period of prosperity when we have a faulty tax structure. It is the only time when we can make adjustments to promote the kind of incentives to spur production, investment, work, and saving that we are going to need. This is especially important at this time because of the imminent relatively large increase in age groups both below and above the working age, accompanied by a relatively small increase in the working population. We should be prepared industrially to meet the demands which will be present during the next few years. I believe that our industrial plant may be seriously undersized if we fail to remove the tax barriers that hamper needed expansion.

Conclusion

To conclude and summarize, we need to put our fiscal house in order. I believe that there is nothing more important than for Congress to regain control of the budget, and achieve the right kind of tax reduction, so that we may confront the future with an assurance that we cannot possess today. The Federal deficits of past years have been the largest element in the inflationary period which we are still experiencing. I believe that deficits have been largely the result of unnecessarily grandiose spending schemes of officials in the Executive Branch. Very often they have been well-meaning, but the results, for whatever reason the deficits were incurred, have been and continue to be dangerous. I must not pass all the blame to the Executive. We in Congress must assume our share as well, particularly in our failure to institute the proper controls. It is difficult to understand how anyone can fail to support a procedure by which a balanced budget can be reached. If there is a better way to achieve it than I have suggested, I shall heartily endorse it. But up to now, I have seen no better alternative. I urge upon this audience the support for a proposition which simply says "We won't spend what we haven't got."

My last few words will be to draw a moral from the Bible. There is relatively little that we can do about the vast debt that we have accumulated in the past. But regardless of the sins of the past, we must pledge ourselves to sin no more. Let us heed the biblical warning:

> If your right eye causes you to sin, pluck it out and throw it away; it is better that you lose one of your members than that your whole body be thrown into hell. Matthew 5:29

Therefore, let us deny to ourselves the occasion of deficit financing, lest we find ourselves in the infernal fires of inflation.

The Utilities and The Capital Markets

By Alan H. Temple

Executive Vice President, The First National City Bank of New York

An address before the Twenty-fourth Annual Convention of the Edison Electric Institute
Atlantic City, N. J., June 6, 1956

IF my remarks seem to fall into two sections rather than to present a cohesive whole, I ask your indulgence. I want to talk first about your earnings, and second about the capital markets to which you come for so much money, and on which you must depend to finance the great growth which lies ahead of you. There is of course a necessary connection between your earnings and your ability to raise capital. To quote from the popular song "Love and Marriage"—rhymed with horse and carriage—"you can't have the one without the other."

A Look at Earnings

First a look at your earnings. Eight years ago I presented a series of charts at your sixteenth annual convention in this auditorium. The purpose was to compare the behavior of earnings of operating electric utilities in various phases of the business cycle with the earnings of other major divisions of business. These charts brought out pertinent reasons for the high investment rating of utility securities, and for the attraction which they hold for conservative investors. They also brought out some reasons why you, and the regulatory commissions, could not afford to be complacent if you hoped to continue to hold investment favor and to finance your capital expenditures soundly and economically. The comparisons given on these charts were made possible by the excellent statistics developed by

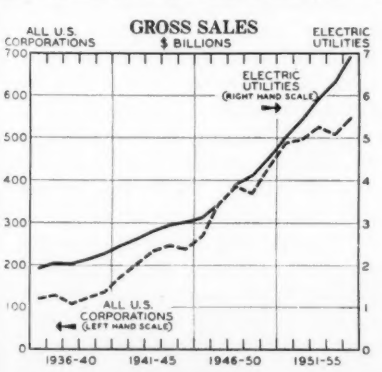


Figure 1

ALAN H. TEMPLE

the Institute, which are related to the Treasury Department's annual Statistics of Income and to earnings figures which the First National City Bank of New York has compiled for nearly 35 years from published corporate reports.

The first seven of the charts here bring the figures of eight years ago up to date. They leave the abnormalities of the World War and depression further behind and show some aspects of the record of the industry in a period which has been broadly prosperous, but also inflationary. They will, I think, without inducing or justifying complacence, show that the industry has maintained the earnings characteristics which make it the number one favorite of conservative investors.

Fig. 1 compares the gross revenues of the privately-owned electric utilities with those of all U. S. corporations as compiled by the Treasury Department. During the first ten years shown, covering the last of the depression years and the war years, the growth in sales of the electric utilities was in percentage terms only about half of the growth of all corporate sales. Utility gross sales were held down by repeated rate reductions, contrasting with the general price inflation, and by wartime restrictions on expansion. During the ten postwar years, however, both series increased at about the same rate. Despite the fact that the utilities were selling their product at declining unit prices, their sales increased 130 per cent in these ten years. Total corporate sales, which had the benefit of rising unit prices, rose 128 per cent. In physical terms the growth of the utilities substantially exceeded the growth of the total economy.

The chart also reveals the superior stability of electric utility sales. In them you will find hardly a reflection of the 1937-8 recession, of the postwar dip, or of the 1949 and 1954 declines, all of which appear in the over-all figures. In two respects therefore, in growth of business and in continuity of that growth, utilities securities have a superior appeal to investors.

Fig. 2 turns from gross sales to net income. It brings out even more strikingly the relative stability of utility earnings, which show none of the jaggedness characteristic of all corporations. It shows a three-fold increase in the dollar net income of the utilities in the past 20 years. This is less than the rise in the corporate total, but note that in the base years earnings were still impaired by depression conditions, which affected utilities much less than other corporations.

Fig. 3 reduces the comparisons to percentage rate of return on net worth. We must of course bear in

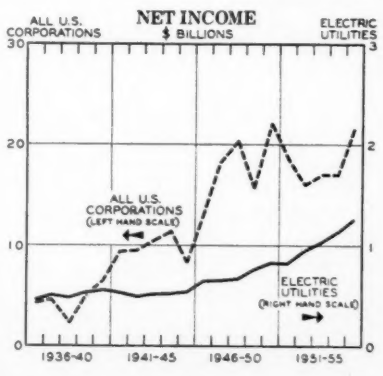


Figure 2

mind that in the utilities, unlike most other lines, a large proportion of the capital invested is represented by funded debt. Thus their rate of return on total property investment is substantially lower than on net worth alone. What we are comparing here is what is left for the owners. The significant point is that the electric utilities fall into a stable middle position. They do not show the erratic fluctuations found in many other lines such as the railroads and trade groups that are given on this chart. They do not experience the extremes of either boom profits at the top or deficits at the bottom. In the past ten years the rate of return has been maintained on a substantially level trend, well above that of the preceding ten years.

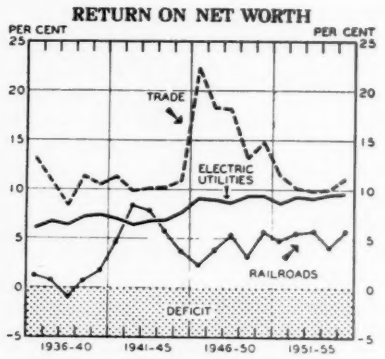


Figure 3

Fig. 4 continues this comparison by showing the return on net worth of electric utilities together with the return of all manufacturing industries and of the steel industry specifically. Again we see that while the utility stockholder accepts a smaller average rate of return in prosperous times, he enjoys greater stability of return, and if and when we have depressions again his returns can be expected to hold up much better.

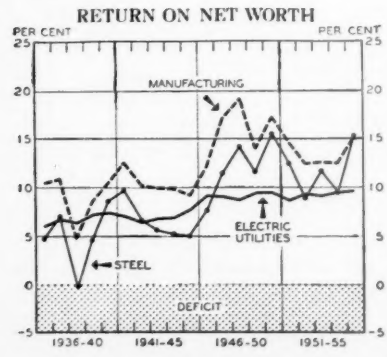


Figure 4

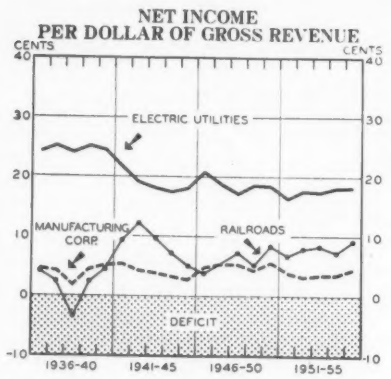


Figure 5

Fig. 5 shows net income in cents per dollar of gross revenue. When I spoke in 1948, the utility line on this chart was at the low point, I think, up to that time. With lower selling prices, higher costs and markedly increased taxes, the declining trend had been a long one, the interruptions only temporary. It was the warning signal on which my talk was centered, for if this decline had continued, the ability of the industry to raise the immense amount of new capital that it has needed would have been impaired. Fortunately since 1948 the line has levelled out, interrupted only by the inflation year 1951. This is levelling out on a bottom, to be sure. The chart shows that the postwar prosperity of the utilities has been achieved entirely through continued expansion in total revenues—not by widening net profit margins. Over the longer term, the net profit margin has been lowered materially, from an average of around 25 cents per dollar of revenue in the five years before the war to an average of only 18 cents during the past five years.

Since the utilities have a much larger investment per sales dollar, or conversely a much lower rate of capital turnover than manufacturing corporations, they must have higher profit margins to survive. You will note that the manufacturing industries generally have shown no such long-term declining trend as the utilities, while railroad margins have shown a rising trend for ten years, of course from a very low level. The fact that the utility industry has prospered on the 18 cent margin of the past five years is a magnificent illustration of the fact that growth in sales and high load factor can compensate for lower selling prices and higher costs. At the same time it exposes the dependence of the industry on volume, especially if the attrition of unit selling prices and the rise of costs are to continue.

Fig. 6 shows the attrition of unit sales prices. During the 20-year period the widely-used U. S. Bureau of Labor Statistics index of consumer prices (also called the cost-of-living index), now based on the average of the years 1947-49 taken as 100, rose by 95 per cent. In other words, general prices almost doubled.

In the same 20-year period, the average revenue per kilowatthour of electricity for residential service declined by 47 per cent. Despite cost inflation the average revenue per kilowatthour was lowered by almost half. Seldom does one see a chart portraying such a striking contrast. This reduction in selling prices is a tremendous achievement, a triumph of management, engineering skill, and technical progress. Undoubtedly it has contributed greatly to the growth which has enabled the industry to prosper. It should nevertheless always be viewed in its relation to the somewhat precariously stable net profit margin, which is so dependent on sustained growth of gross revenue.

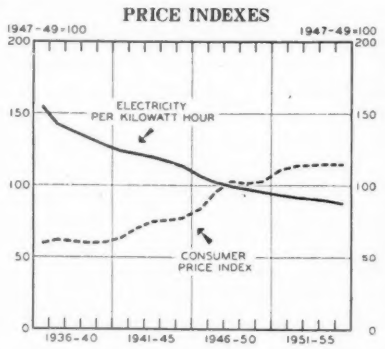


Figure 6

To conclude the charts related to your earnings, let me now show one that will sum up certain factors. Fig. 7 includes two panels each covering ten years. First, let us consider the four bars on the left, presenting the changes that occurred between 1935 and 1945. In that period your total output increased 103 per cent, although your plant and equipment account was actually reduced 3 per cent through depreciation and accounting adjustments. It is plain that the use of plant was greatly intensified, since output was doubled in this period. However, total revenue rose only 69 per cent and net income only 30 per

cent. This was a very unsatisfactory and indeed an alarming showing. It revealed the effects of inflated costs and taxes, declining selling prices, and war time inability to install modern equipment on net profit margin; it ran absolutely contrary to the experience of other industries, whose net rose during that period even more than physical output and gross revenue;

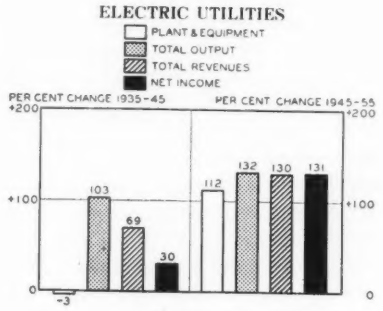


Figure 7

and it was a reason for profound concern in light of the industry's coming capital needs.

Now look at the right hand panel covering the ensuing ten years from 1945 to 1955. These figures confirm the showing of one of the earlier charts, that the deterioration in the net income ratio has at least been checked. While the plant and equipment account rose 112 per cent in these ten years, plant utilization continued high, output rising 132 per cent. The encouraging fact is that gross and net both rose by similar percentages. This of course does not signify that margins have improved since 1945, only that the erosion was checked.

Prospects for Growth

In talking here in 1948 my closing words were as follows: "Fortunately growth is not ceasing nor need we feel apprehensive that it will cease. Nothing is likely to stop it. However, it may slow down or stop temporarily. . . . Should the industry ever approach a saturation point, a continuation of this long term trend of margins would prove destructive." In 1956, eight years later, we can note with gratification that the decline was about to be checked even in 1948. If it had not been checked the record of successful appeal by the utilities to the capital markets since then could hardly have been made. But with margins still virtually at their historic low, the dependence of the industry on volume and growth is as pronounced today as it was in 1948. Fortunately the prospect is still brilliant. As we said then, "Nothing is likely to stop your growth."

These are the salient points of the earnings record that your industry brings to the capital markets. In the years to come your output and hence your capital expenditures must increase tremendously to meet the needs of a growing population, an expanding economy and a rising standard of living. The estimate of *Electrical World*, that your capital expenditures will rise in 1970 to $7.8 billions, in 1954 dollars, is typical. This figure makes no allowance for rising costs. If it is a reasonable estimate today, the actual outlays by 1970 will probably be much higher.

Where Is the Money Coming From?

The second part of this discussion, to which I now turn, is: Where is the money coming from? One popular way of dealing with this question is to make forecasts of the total supply of and demand for corporate and mortgage funds. I shall not indulge in this pastime, for I have never known anyone to make such estimates accurately for one year ahead, let alone 15 years. The fact is that future capital demand is as elastic as the wants of people. It is surely affected in some degree by the price of the capital, and by the optimism or pessimism prevailing at any given time. It is affected by technological developments, and by extraneous and unpredictable political or international influences. Similarly the supply of capital is elastic. It is influenced by economic conditions, the propensity to spend or save, and by interest rates. In such areas of uncertainty it is unreal to project specific figures far ahead.

It is more profitable to ask ourselves what kind of economic environment will encourage economic growth, and at the same time encourage the formation of savings to finance the capital requirements of a growing economy. The American economy is a growing economy. It is also, unfortunately, an inflating economy. In some other countries, inflationary trends are due to an attempt to grow too fast, or to fiscal and monetary sins. In the United States, at least in recent years, neither of these seems to be the impelling cause. Our recent inflationary trends stem from the successful demands of the labor unions, and the acquiescence of employers in these demands, for wage increases substantially exceeding increases in man-hour output. This raises costs and forces prices up. It stimulates inventory accumulation and it stimulates a speeding up of plant and equipment spending. It adds to the demand for money, and presents to the money managers an almost insurmountable problem. For while they are supposed to repress inflation and protect the value of money, what they can do in the money field has only an indirect and very limited effect on wage-cost price pressures. To suppress the cost-price spiral by monetary measures alone would require a credit squeeze and presumably a degree of unemployment which would be considered intolerable. This is the dilemma of the money managers. I am sure it is what keeps them awake nights.

Cost inflation raises capital requirements. It is perfectly true that in the electric utilities you are buying more kilowatts of generating capacity per dollar than you did ten years ago, thanks to technological progress which is a great point in your special case. The rise in capital costs generally, however, and in capital requirements, is indisputable. Fig. 8 illustrates this point graphically in terms of the inflation of construction costs during the

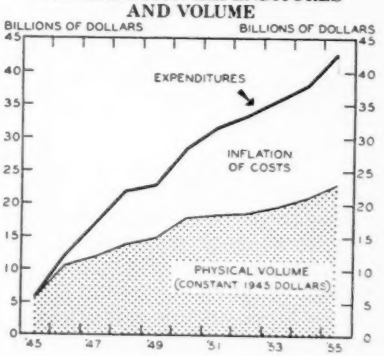


Figure 8

past ten years. Between 1945 and 1955 total construction outlays rose from $5.6 billion to $42.2 billion. If all this work had been carried through on the basis of 1945 costs, the actual layout would have been something like $22.6 billion. In other words, approximately $20 billion was added to the 1955 construction bill of the country by inflation of costs in the past ten years.

What is the effect of inflation on the other side of the equation, on the willingness to save and the accumulation of capital? As costs inflate, incomes of course inflate also, and the potentiality for saving tends to expand somewhat in proportion. Of course personal savings today are far larger in dollar terms than they were in prewar days, and so is the retained income of corporations. Both of these are shown in Fig. 9. While the line for personal savings reveals the great increase over the prewar years it also shows something else that is disquieting. The rise in savings had almost reached its peak both absolutely and relatively in 1951. It held for three years at a little less than 8 per cent of disposable income, then it declined in 1954 and 1955 and showed a trifling recovery in the first quarter of this year, when it was 6.4 per cent of disposable income. This spring, savings have fallen short of meeting inflated capital requirements. The evidence is the rise in bond yields, and the rise of bank loans.

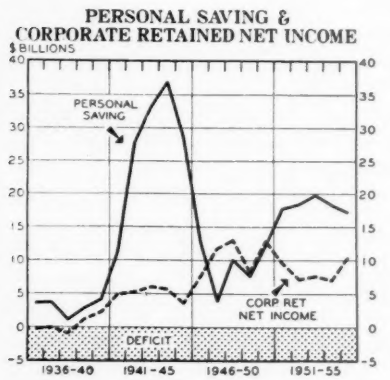


Figure 9

I put before you the question: Are these indeed significant developments? Is the present inadequacy of savings, relative to demand, due not only to inflation of capital requirements through cost increases, but also to economic conditions and policies which discourage saving? Is the long history of inflationary price increases, attrition of the real purchasing power of savings, heavy and increasing income and inheritance taxes, and deliberate depression of interest rates, catching up with us at last? Fig. 10 shows the attrition of the purchasing power of savings invested in securities, due to all the factors mentioned.

This chart presents the changes in

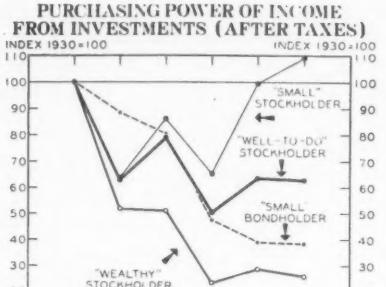


Figure 10

living standards, or more accurately in the purchasing power after taxes of income derived from investments, of four hypothetical persons living on such income. The base year, taken as 100, is 1930. For each year selected, after-tax income, adjusted for changes in the cost of living, has been related to 1930 after-tax income. Thus, the index reflects changes in the rate of return on investments, in the level of income taxes, and in the value of the dollar.

Three stockholders have been used as examples with dividend income in 1930 as follows: the "small" stockholder, $3,000; the "well-to-do" stockholder, $30,000; and the "wealthy" stockholder, $300,000. The dividend income is assumed to have fluctuated thereafter in the same degree as total dividend payments. The "small" bondholder is one with an investment of $60,000, the rate of interest on which is assumed to be equal to the average rate earned on life insurance company investments. He would be in a low income tax bracket.

The decline in money rates, the rise in the taxes, and the cut in the value of the dollar have reduced the purchasing power of the bondholder's income to less than 40 per cent of what he was getting in 1930. The small stockholder, subject to the lowest tax rate, is the only one who has ended up even or better. The "well-to-do" and the "wealthy" stockholders have lost heavily despite dividend increases, because their high tax rates and the doubling of living costs have whittled away the purchasing power of their income.

Since this is not a new story, why didn't savings as a proportion of income slacken long before they did? Perhaps the reason is simply that people are slow to believe the worst, and savings habits are deeply ingrained and slow to change. It is fortunate that this is so. A great deal of savings is contractual in nature, such as premiums on life insurance policies, pension contributions, debt repayments, etc., and few people stop to think of their eventual purchasing power. Whatever the explanation for the savings habit, nevertheless an enlarged demand for savings is hitting at present against a relatively declining supply.

The last chart, Fig. 11, is a record of corporate bond yields—interest rates—over the past 55 years. From 1900 to 1936 it covers high grade railroad bonds and thereafter Moody's Aaa corporates. This chart may suggest to you that a great deal that has been said about everlasting cheap money during the past 20 years was the product of depression conditions and depression thinking and theorizing, and that it has little relevance to the early future. The great depression

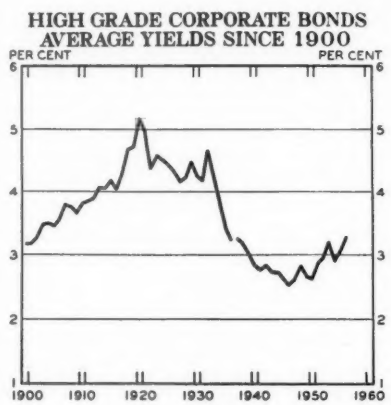


Figure 11

brought a natural easing of interest rates due to stagnation, but it also brought with it the policy of using central banks to drive interest rates down. In the United States the devaluation of the dollar in 1934 drew in gold from all quarters of the world and saturated the money markets. When the outbreak of war raised demand again, central banks supported government financing at fixed interest rates. After the war the huge public debt gave additional reason to keep rates down in order to minimize interest costs. Meanwhile the influence of Lord Keynes who prescribed euthanasia for the rentiers, painless death for people living on interest, spread over

the world. It was an era of cheap money forever.

But then we learned something else, that artificially cheap money could be maintained only at the expense of inflation, with all its inequities, evils, illusions, and international disturbance. Gradually flexible money policy was restored. The actual low point in bond yields here was reached in 1946 but not until 1951 was Federal Reserve pegging of government bond prices finally abandoned. Since then bond yields have risen somewhat as the chart shows, but on the historical record current rates are moderate.

The belief that the low interest rates of the late Thirties and Forties represented a new era was based on three principal ideas. First, that capital is more efficient, so that a greater output can be obtained from a given expenditure. Second, that economic progress provided people with a wider margin above subsistence needs and hence a greater margin for saving. Third, that central banks would maintain low interest rates to reduce the cost of carrying debt and promote growth. This is not true when inflation exists. It now seems that we should give consideration to other factors, namely, to the effect of rising costs in inflating capital requirements, to the effect on saving habits of the attrition of purchasing power during the past 20 years, to the effect of high and progressive income and inheritance taxes and of depressed money rates, and to the fact that an inflationary bias from the wage-cost price side stacks the cards against the lender of money at interest. Perhaps this rebalancing of influences on interest rates signifies that in the longer perspective we shall see the present upward hook on the chart as part of a cyclical swing rather than as a momentary money squeeze attributable to misguided monetary authorities. Certainly the interest rate curve may be dampened down by greater efficiency of capital and greater potentiality for savings, but equally certainly inflation tends to raise rates.

What are the interests of the electric utility companies in this situation? As large borrowers and as good Americans, you have a stake in encouraging savings and insuring an adequate supply of capital at moderate rates to promote economic growth. If what I have showed to you and said here has any meaning it is that the best way to assure savings and maintain moderate interest rates is to protect the purchasing power of the dollar, inspire confidence in fixed investments, and finally to reduce the tax bite as circumstances permit. Savers will not be perpetually satisfied with moderate returns unless they can trust the future value of money they lend.

When the output of capital goods is at capacity, and no more structural steel, plate, pipe, or machine tools can be had, the rate of real investment cannot be augmented by supplying more credit to supplement inadequate savings. If the monetary authorities should finance a still greater capital goods demand, they would add to the inflationary wage-cost pressures. The allegation that the Federal Reserve authorities are taking a position against economic growth will not stand examination for a moment. It could be refuted by the record and by quotations from Federal Reserve policy statements. More practically, I suspect it will be refuted in the fairly near future by renewed evidence that the policy is flexible, that it can change with conditions, and that it is never designed to repress growth but only to hold growth at a sustainable rate.

In any case there is no question as to where the utility industry, with relatively controlled selling prices and uncontrolled costs, should stand on inflation. My purpose has been to point out your equal stake in encouraging savings and obtaining capital at moderate rates, which necessitates protecting the value of the dollar.

Engineers for the Electric Utility Companies

(*Continued from page* 182)

practice of the older officers was to give freely to the younger ones the lessons they had learned. They made it their business to guide and boost the youngster. I benefited greatly from their encouragement, guidance, and well directed help.

Where Company Presidents Have Come From

Five or six years ago a quick review of the background of the incumbent presidents of 75 larger electric utility companies showed their occupational background to have been as follows: 40 came from engineering, seven were lawyers, eight came from accounting, four from commercial, eight from clerical, and eight were non-classified.

Of the 75, eight had always worked in the same company before coming to the company of which he was president, eight had worked in an affiliated company, seven had worked in a non-affiliated company, 15 had worked in a company outside the power industry, and 37 had worked in more than one other industry.

You As President

If you get to be president, don't stop developing the young men, be sure that you are as fair with young engineers as you are with young men in other professions in your company, but not more than fair with them. If you have used your assistants properly as engineers before you became president you will know how to use your chief engineer after you become president. Don't be the engineering expert.

Summing up:

Your part in attracting able young engineers to your company is for you to keep the road open for advancement for young engineers by advancing yourself and drawing them after you.

If you have natural ability to advance to a high administrative position in the company, exploit this capacity from the start and earn the office.

The strongest attraction of a job in a company to the above average young engineering graduate is to see the road wide open for him all the way to the top of the company. To do your best to create and maintain this strong attraction can be your contribution to your company and your profession.

The Atom and Public Consent

By James F. Fairman

Vice President in Charge of Engineering,
Consolidated Edison Company of New York, Inc.

An address before the Twenty-Fourth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 6, 1956

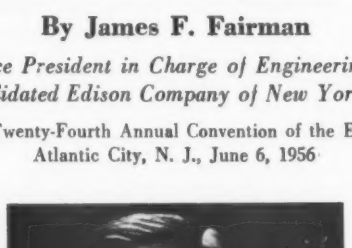
So many of us have spent so much time on atomic energy this past year and the several trade journals—to say nothing of the general press—have published so many details of the electric industry's various projects, that I do not propose to confuse the issue further by recapitulating the progress that has been made in translating nuclear energy into electric energy.

We all know there has been definite progress. Design work on many projects has proceeded according to plan.* The Shippingport plant is well on its way to completion. Research and investigation have rolled back many frontiers. We are now in the second year of the commercial nuclear industry. And the future prospects of this young industry appear good.

Now it is the future that concerns us, the future of the nuclear industry as well as that of our own electric utility industry. I have no doubt that we will solve the technical problems of that future. But there is another problem—equally or perhaps more important—which we must tackle without delay. That is the problem of public consent.

It has been said that the study of history is one of the methods by which one may hopefully forecast some part of the future. We in the electric utility industry are lineal descendants of one of the oldest trades on earth. We are in the energy business. We can trace our business ancestors all the way back to that specialist who gathered pine knots for the tribal campfires in the damp caves of long ago.

The history of civilization closely



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parallels the development of energy sources. Those early bursts of culture, the Egyptian, Greek and Roman eras, were based on slave labor. Slaves were dividend of military power and while these civilizations had military power they could go out and get themselves new supplies of energy whenever the old ones began to be exhausted.

The Dark Ages that followed the Roman civilization accompanied a breakdown in the economy based on slavery. Military might was broken into so many small pieces that there was no ascendancy. Nor was there much peace. Each untrained, poorly organized community struggled desperately to meet its own bare needs. In the so-called Dark Ages the prime source of energy was still muscle—muscle of man and of animal.

Finally, man emerged from political, intellectual, and moral chaos and advanced step by painful step in every field of human endeavor. Among other things he gradually found out how to harness some of nature's sources of energy and he devised new tools to use energy more effectively. He brought about the industrial revolution.

Later electricity was put in harness, and for the first time the human was equipped with a flexible and readily divisible form of energy free of location restrictions. The factories no longer had to be located alongside waterfalls and the homes could receive power by pushing buttons. Electricity was relatively low in cost and was paid for only during the time it was used.

Electricity is as flexible as the old-time slave system. It is adapted to tasks from egg and rug beating through providing light and refrigeration. Roman emperors used to have their wine chilled with snow carried down by runners from the mountain tops. The problem is solved much more neatly and cheaply today.

The use of electricity rose constantly in America as more chores were turned over to the electric utility industry and more customers were connected to the lines. Electric loads also increased because of a sort of internal feedback. Electricity and its availability spawned a whole new order of applications that had not been conceived before. This development was beautifully phrased on the recent Diamond Jubilee Light's telecast when it was said: "Why, if it weren't for Thomas Edison, we would all be watching television by candlelight."

Prime Energy Business

Electricity is now established as the prime energy business. There are many of us who have spent nearly all our working lives in this industry. Sometimes, I know, we feel there is little else of importance in the world. At least, that is the frequent accusation made by our wives. Our work is fascinating and absorbing. The problems are challenging. It is not a simple business. There are some 300,000 of us at work in this country's electric utility companies. This is a large enough group to fulfill any individual's need for

*Editor's Note: Testimony by Messrs. Fairman, Milne, and Landis before the Joint Congressional Committee on Atomic Energy, on May 29, outlines progress on the Consolidated Edison Atomic Energy project. Copies of the testimony may be obtained from the Edison Electric Institute on request.

human companionship, a large enough field in which to work out our individual aspiration for accomlishment. We might act as an entirely self-contained unit and ignore the rest of the population.

But this is a temptation we must fight. We must never forget that it is public consent that keeps us in business.

It was the withdrawal of public consent that ruined the military might of early civilization and reduced their energy sources. It was the granting of public consent that made the first industrial revolution possible.

A Triangular Affair

Public consent is a triangular affair involving company personnel, investors, and the general public. There can be divergent points of interest, but the final decisions must fall within the parameters of these three viewpoints if they are to endure.

In the American scheme of things, this granting of public consent is often a noisy affair. Perhaps this noise is the principal reason why strangers, unaccustomed to the American life pattern, find it so difficult to understand us. They mistake the sound and fury for the substance.

The noise in the atomic field during the past year is typical of our way of doing things. Several times, it sounded exactly like two small boys in heated argument, shouting "Can so" and "Can not" at each other.

Possible Conclusions

An observer might have concluded that the electric utility industry was split into two opposing camps, that the Congress and the Atomic Energy Commission would never agree on anything again, that the biologists and the physicists were locked in mortal combat.

But in spite of the clamor, perhaps even spurred on by it, there has been steady progress. Power reactor plans have gone through successive blueprint stages. Mathematical problems of incredible complexity have been fed into electronic computing machines and have emerged on the other side translated into answers on which designs are based. More test facilities are under construction where these calculations can be checked and rechecked. These tests do not imply distrust of the theories and the computations but the atomic field, with its many unknowns, is not the place for cut and try methods. The industry, with a substantial stake in the atom, wants to be as sure as is humanly possible that it is proceeding sanely and safely.

No Hothouse Forcing

The industry feels that competitive electric power from the atom cannot be forced in a hothouse atmosphere of government funds. Instead, it should be handled like all the many successful innovations that have been adopted over the years. We can point to the successful introduction and on-the-job development of turbines, of pulverized fuel, of the alternating current network, of high tension transmission as examples of the surest and swiftest way to follow in putting safe and efficient atom-power on the line. We believe we are skilled in the practical application of new devices and methods.

Lured by early publicity, investors rushed into the atomic field as if it were another Klondike. Many of these ventures proved to be subcritical, in atomic terms. The head of one major manufacturing concern found it necessary to tell his stockholders that profits from hoped-for atom business were at least ten years away.

These early excesses are being ironed out and we are left with the impression that the investing community, and particularly their technical advisors, are fully aware of the atom's potential.

The general public is the remaining factor. The general public is not yet with us in the application of atomic energy to the generation of electricity.

Here we have once-in-an-industry opportunity. Except for the Shippingport plant, which will be in operation next year, nearly all of our projects seem scheduled for operation about 1960. We have almost four years of detailed design work and actual construction ahead of us.

In this interim period, we should make the most of our opportunity to explain the facts of atomic life to the public. This will not be easy. But it does seem that the experts in the field, given the proper amount and type of support from the industry, should be able to do this job.

Public's Mental Blocks

There are two mental blocks in the public mind as far as atomic energy is concerned.

The first, of course, is the original use of atomic energy as a destructive force. Even now, many people draw back from atomic information with a reflex action that is more emotional than logical.

The second block is the complexity of the subject. Atomic science grew up in a laboratory of its own, cut off from the world by requirements of military secrecy. Those of us who got into the lab after the science was in nearly full flower (by means of that small door cut in the wall in the shape of the letter Q) found a new vocabulary and a new order of physical measurement that stunned the imagination.

Now, however, several doors have been opened to the laboratory and there are only a few dark corners still hidden from public gaze. The new science has been poured over the public in sizable doses. For a housewife who does not even guess how her automatic washer timing mechanism works, for an artist who can never balance his checkbook, this new atomic language might as well be Sanskrit. All you have to say is "atom" and these individuals jump to the conclusion that they will not understand. Since they will not, they can not.

Communications Problems

These two mental blocks are something for our communications people to contend with. It seems to me the emotional fear of atomic energy can be removed by placing emphasis on the positive benefits of this new fuel. It also seems to me that atomic energy can be made fascinating and human, which would do a great deal to remove the second type of mental block.

In any case, something must be done to bring the story of atomic en-

ergy in the field of electric generation to the public within the next few years. Our recent experience in New York indicates that the job can be done.

Every few years, Consolidated Edison conducts an opinion survey in its territory—New York City and Westchester County. We have just completed such a study which for the first time included some questions on atomic energy.

Results of Survey

We found that 22 per cent of the people in our area knew we were involved in the application of nuclear energy to the generation of electricity. In Westchester County, where our nuclear steam electric plant will be located, we found that 29 per cent of the public had heard of our plans. Next, we found that only 25 per cent of the people in the City favored development of atomic electricity by private enterprise compared with the 43 per cent endorsement of private enterprise in the atomic field found by the recent Opinion Research Corp. study of national opinion.

The drop from 43 per cent endorsement nationally to 25 per cent endorsement in New York City, reflects, at least in part, some of those differences that distinguish the city from the rest of the nation.

In Westchester County, however, we found that 35 per cent favored development by private enterprise.

Influence of Name

We told the people we questioned that Con Edison was working to use atomic energy in making their electricity, that is, we told the respondents who did not already know it. We asked them all if they thought this development was a good idea. Sixty per cent of the people involved in the study thought it *was* a good idea. Remember, earlier in the quiz only 25 per cent thought private enterprise should undertake this venture. But 60 per cent thought it would be a good idea for Con Edison, their local electric utility, to do the same thing. Even among those who originally favored government development when the question was first asked them on a broad basis of ideology, a total of 55 per cent thought it was a good idea for Con Edison to go ahead with atomic plans.

The main lesson we all learned, I believe, is that in New York City today we cannot appeal for support on the basis of ideology, political philosophy, or broad generalities. We must use our own name. People pay their bills to us. They see our trucks and our advertising. They know their neighbor as the "man who works for Con Edison."

When we can add some information to the magic of our corporate name, the figures go even higher. Among that fifth of the people who knew we were active in the atomic field before the interviewer called on them, some 84 per cent thought it was a good idea.

Differences Large

The difference between the figures is large. With the old argument of private enterprise we can find 25 per cent support for our atomic plans. Add the information that the local electric utility is interested in atomic development and the vote of confidence rises to 60 per cent. Increase this information with just a few details about the plant we are going to build and the favorable vote goes up to 84 per cent.

Of course, there are still those who disapprove and those who are undecided. It would be a dull life indeed if everyone agreed on an issue as complicated as this one. Among the customers of the electric utility industry, I am sure, there will always be a hard core of dissenters whom we cannot hope to convince. But we can certainly reduce the fertile area around these dissenters by cutting down the percentage that has not yet decided and by strengthening those who favor our program.

Public acceptance is something we need very badly in this business of ours. The occasions when we need public support are following each other more and more closely these days.

While the electric industry is one of the foundations of American civilization, we must always remember that we can be replaced. Some of the members of the club have been. There was a time when the gas industry thought it held an enduring natural monopoly on the lighting market.

In atomic energy, this industry of ours has a new tap root reaching back into the basic energy reserves of Nature. It is our responsibility to process that energy and deliver it to our customers. We must do this promptly, openly, and with enthusiasm. And, above all, we must let our customers know we are doing it. It follows that, in so doing, we have one more opportunity to present the facts of life of our business and the vital role we play in the competitive enterprise system.

If we do a good job of producing and distributing our energy to our customers, if we do a good job of spreading the word that atomic electricity is being brought to market in line with the time-proven principles of the American economic system, we will welcome any occasion when the chips are down and the committees with the high-sounding names are organized. By our good works, we will have earned public consent.

Confidence Regained

(*Continued from page* 173)

Better Electrically," and other programs, our industry is not only bringing the benefits of electrical living to its customers but, at the same time, it is rekindling among our own people the commercial spirit without which we cannot hope to achieve our true potentialities of growth and expansion.

Only a few years ago the New Dealers and the Fair Dealers in both political parties—ganging up with outright Socialists—had pummelled our industry into grogginess. In the language of the prize ring, they had knocked us down and some of them were prematurely beginning to count us out. This year—thanks to your indomitable courage and determination—our industry has literally "come up off the canvas" to slug it out with the opposition. And we have found that the opposition is not only vulnerable but much less a public favorite than we had been led to believe.

The question—the only question—is whether we have the stamina to stick it out, to keep hitting back, finally to turn apparent defeat into victory. As the sportswriters say: "You can't beat a fighter who won't be beat!"

Breaking Through the Sound Barrier in Management-Union Relations

By Mark W. Cresap, Jr.
Executive Vice President, Westinghouse Electric Corporation

An address before the Twenty-Fourth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 6, 1956

MANAGEMENT-UNION relations and electricity have a good deal in common. The vast majority of people in the country are directly or indirectly dependent on both. Both generate sparks, and are sometimes shocking.

When Mr. Branch invited me to address this distinguished audience, he suggested the general subject of management-union relations, including some references to the long strike to which our company was recently subjected. He very kindly permitted me wide latitude in the actual content of my talk, for which I am most thankful. For while I will stay within the general subject specified, I do not intend to deal with the strike except as it pertains to a theme to be developed in this talk.

I want to say at the outset that I feel uniquely privileged to address this group, particularly concerning a matter on which the utility industry has established such an enviable record. The manner in which your companies, as a whole, have dealt with their labor problems over a period of years represents a very high standard of accomplishment.

The IUE strike against Westinghouse belongs to the past, and a postmortem at this late date would serve no purpose. While the outcome was of great significance to the electric utility industry, many of the factors underlying the strike, and the problems faced in bringing it to a conclusion, were peculiar to the controversy in question, and would have no particular bearing on situations confronting your companies.

But I do want to express to you gentlemen, as Bill Price and others in Westinghouse management have done earlier in smaller meetings around the country, the great appreciation of Westinghouse for the

MARK W. CRESAP, JR.

understanding attitude and helpful position taken by our electric utility customers, whose backing enabled us to stick by our guns and achieve the important objectives which were at stake in that strike. We are fully aware of the sacrifices and hardships your companies accepted and endured to support us as you did. I can assure you that we will never forget it, and that our service to your companies will reflect our lasting gratitude.

We achieved these objectives in a five-year agreement, which furnishes the contractual basis for an era of greater labor stability. But that contract in itself will not assure stability in our union relations, in spite of its recognition of the important principles for which we fought so long. Therefore, the same determination demonstrated in our recent battle will be directed towards securing the peace.

The stability of labor relations in the electrical equipment industry, and in our company as one of its major factors, is a matter of great practical importance to you.

Labor stability of the industry is the product of the stability maintained in each of the companies in it. Consequently, in discussing this subject, comments as to the Westinghouse situation are in order.

We would be naive indeed if we did not recognize that, although the strike has cleared the air in many important respects, any company's labor relations suffer from the scars of a major strike. We know, too, that the best insurance against work stoppages comes from the amount of management effort and the degree of management skill applied to developing the right kind of labor relations climate. To this end, we are currently in the process of a comprehensive and fundamental review of our union and employee relations policies and practices. In this effort, we are employing the most competent assistance available, both inside and outside the company. It would be premature to discuss our program at this time. However, we are confident that we will create better management-union relations than we have ever had before.

But labor stability in electrical equipment manufacture is dependent not only on the efforts of companies making up the industry, but also on the basic fabric of management-union relations throughout the country. For favorable conditions achieved by individual firms or even industries can be erased by unfavorable country-wide conditions, such as industry experienced in 1946.

History of Industry-Labor Relations

A backward glance at the history of industry-labor relations in America over the past 25 to 35 years reveals a notable and fairly steady trend of progress in the prevailing climate. Take the end of World War I

as an appropriate starting point. During the early Twenties, the country was plagued with labor troubles, characterized by an underlying Marxian influence exploited by the IWW, arousing labor to beat the drums about the struggle between classes and the battle-to-death between capital and labor. The situation improved thereafter, but even in the Thirties, labor disputes were tinged with a hold-over of the inroads made by the Marxian idea. Today, these ideological chasms between industry and labor are generally obsolete. There are a few pockets of resistance, but they are diminishing, and the AFL-CIO itself is doing an admirable job of getting its house in order. There are many differences between management and unions today, and it is in the very nature of things that there always will be. Their objectives differ on a number of scores, and there are wide divergencies on policies and techniques pertinent to the rights and obligations of companies, unions, and employees. But as to the fundamental goals for the American economy, there is general agreement. Both management and labor want full employment and a rising standard of living. But more important, the poisonous influence of trumped-up class warfare has fortunately been demoted as an emotional implement in labor disputes.

Failure in Communication

In contrast with the vastly healthier industry - labor atmosphere achieved in this country over the years, the communication between management as a group and labor leaders as a group has failed to make much headway. Each is prone to regard those in the other group as representing a different kind of human animal from themselves, and sometimes as having originated on another planet. There is a little of the "cold-war" touch to the relationship, characterized by each group staring across the fence at the other. Unfortunately, most of the communicating on subjects affecting management-labor relations is done by managers to other managers and by labor leaders to other labor leaders, each convincing the already convinced.

The participation of Gordon Freeman, President of the International Brotherhood of Electrical Workers, on this program is a notable exception to the preceding comment, and one for which the Edison Electric Institute and Mr. Freeman are to be congratulated.

Some recent efforts to establish communications liaison between representatives of industry and the unions, at a very high level, failed because the arrangements and procedures were not conducive of a relaxed and non-combative state of mind on the part of either side.

Industry's Interest

Industry has a pressing interest to improve this condition. The relative harmony achieved recently has been made possible in large part by a ten-year period of almost uninterrupted prosperity and increasing production. The real test will come during an inevitable future downward swing of the cycle, however distant this may be. The Marxian philosophy, which industry and labor have helped subdue, has rubbed off on enough people in the past 30 to 40 years, to pose a potential threat to industrial stability when conditions foster the spread of its pernicious doctrine. It is then that industry would benefit from a better understanding with labor leaders, built on a history of effective intercommunication on the fundamentals of management-labor relationships, as a cohesive force in a joint attack against this threat.

"Preventive Communications"

The desirability of "preventive communications" in this connection is akin to the need for the same medicine in individual companies. A big strike inevitably spotlights the fact that perhaps a better job of communications could have been done which might have prevented or shortened the stoppage. In looking down the road, industry can take a leaf from this book, and start building a bulwark against possible future deterioration in the industry-labor climate through promotion of better intercommunications between the two groups as a basic preventive measure.

Furthermore, one of the things that has harassed American management in its past dealings with labor has been its essentially defensive posture in major labor developments. Issues are created and fostered by the unions, as management watches from the sidelines. Then, when these issues have ripened, management is confronted with them at the bargaining table. By this time, the only alternatives to a major battle are often to submit or compromise on a proposition regarding which it has had but little exposure to labor's point of view. If management, through improved communication with labor, can keep itself more fully informed about these developments from their inception, it will be in a better position to take the early initiative where desirable, or at least be prepared to deal with them more decisively when the time comes.

Labor's Stake

Labor has as much, if not more, at stake in the stimulation of such intercommunication. Union leaders have acquired new problems with the growth of organized labor, with the greater maturity of the movement, and with the recent creation of the consolidated master-union, representing the greatest concentration of power in the country outside of the Federal government. In this new status, much more will be expected of labor leaders by the public and by their own constituents than ever before. Aggressiveness will no longer be the prime specification for union leadership. The premium qualities will be maturity, stability, judgment, progressiveness, and fairness. This brings to mind the results of an exceedingly significant study of attitudes of employees towards management executives and union leaders conducted by The American Institute of Public Opinion in 1954. Their findings revealed that, whereas union leaders were credited with a greater interest in employees' welfare, a substantial majority thought that management executives were fairer and more forward-looking. There is no better way for labor leaders to demonstrate the qualities that their greater obligations will require than to display a willingness and ability to develop a closer fundamental relationship with management as a

whole. And such a relationship is dependent on a much improved system for intercommunication.

The time is ripe for such a development, and also the conditions surrounding the relationships of the management and labor groups, as well as their respective self-interests, require it.

Informal Intercommunication

Communications, of course, covers a lot of ground; and while there is much that can be accomplished in many other facets of industry-labor communications, my comments will be directed to informal personal intercommunication between management and labor leaders.

Just as charity begins at home, any constructive effort to improve such intercommunication generally depends on the success of efforts within individual companies — between individual managements and the unions with which they deal.

Let me say at this point that communications between managers and labor leaders is no substitute for direct and regular intercommunication between management and employees. Too many segments of industry have not fully appreciated the extent to which their fundamental relationships with their people are dependent on the uninhibited inter-exchange of points of view. The problem is heightened by the fact that unions are inherently good communicators. They have to be; it is one of the principal ways of maintaining their memberships. Also, communication is a major function of their operation, and the ability to communicate effectively is a prerequisite of union leadership. With management, pressed by the requirements associated with running a business for its stockholders, the function of employee communication is less prominent. And yet, the key problem in attracting a fair share of the respect and loyalty of the employee is hinged to communication in its broadest sense. Correction of the impression revealed by the employee opinion survey mentioned earlier can only come through management's ability to create a truer image of itself in the minds of employees—an image reflecting as great, if not more, concern with the welfare of its people as the unions are credited with.

But even if good employee relations are sustained by effective communications, the need for good relations with union leaders still exists. And this brings me to a discussion of management's approach to the problem of direct communications between managers and union leaders —why it should seek to establish such communications, and how it should go about it.

As to the "why," the reasons seem powerfully compelling, even though they are largely intangible.

It is easy to attack—personally or otherwise—people you don't know, and that is true whether you are a union leader or a management representative. It is only human to resist what one doesn't understand, and we all know how many times apparent problems disappear when we get to know the people involved. As Will Rogers used to say, "I never met a man I didn't like." We all, as managers, recognize the value of participation as a means of creating better understanding and acceptance of new ideas in our own affairs. Most of these things we accept in dealing with our own associates and subordinates, with our customers, with suppliers and others; but it sometimes seems that we, as managers, forget all of these basic principles of human relations when it comes to dealing with the people selected by our employees to run their unions.

No one can put on a dollar sign or apply a slide rule to find the answer to why managers and union leaders ought to know each other and communicate concerning their respective problems—but it is the key ingredient in the improvement of management-union relations, and in the development of labor stability.

The "How" of Intercommunication

The "how" of doing it is not susceptible of precise definition. Methods and techniques that would work in one set of circumstances would likely be wholly inappropriate in others. However, certain observations apply to the successful achievement of management-union intercommunication in general.

At least in the beginning, an effective management-union communications program might be more likely to succeed, if it avoided agenda, memoranda of understanding, minutes and all other formal trappings which are used as tools in other phases of labor relations. A great deal will have been accomplished if union leaders and managers simply get to see each other around the dinner table, as well as around the negotiating table. In time, more specific programming and accomplishment can develop, after each side has had a chance to get a little better appreciation of what makes the other side tick.

By all means, neither side should initiate this kind of program with expectations that are impossible of accomplishment. It is better to expect too little than too much. Neither side should expect to convert the other overnight. If both can sumply get around to the point of discussing what's going on and what lies ahead in their respective spheres of activity, diverse as they may seem at the beginning, they will have made the first steps toward sounder and more stable relationships.

Management-union communications cannot be on a sound healthy footing if management fails to recognize that unions are, by their very nature, political institutions, and that union leaders occupy their positions of leadership because they have succeeded in winning the support of the people they represent through the use of political methods and machinery. No criticism of union leaders is intended on this score. On the contrary, they must be good functioning politicians to meet the requirements of their jobs.

Company Level Action

The broad and pressing problem of improving management-union relations is best tackled, initially at least, at the company level, for otherwise it is not practical to expect any noticeable progress on a broader basis. Nevertheless, the accomplishment of better relations, through intercommunications, between management as a group and labor

leadership as a group, on a national scale, is an objective to which industry might well turn its attention, even though the time may not yet be ripe for concrete action in this direction. To this end, I would like to devote a few very brief and very general comments.

Group Meetings

One of the features of the American economy is the vast amount of communication accomplished in group meetings. In industry, meetings of individual industries, like this one, have become part of the process of doing business. Customers and suppliers in most fields meet regularly. I have heard that, in some industries, even competitors get together in relaxed surroundings to discuss the dwindling number of subjects permitted by law. But between the two groups as interdependent as any of the foregoing, management and union leaders, the valuable intercommunication generated in such gatherings has been practically foregone.

No Insurmountable Obstacle

There is no insurmountable obstacle to solving this problem. The differences in viewpoint between the two groups are certainly no real bar to two-way discussions. And there are impelling reasons for breaking through the sound barrier.

It is not my purpose to outline a full-fledged proposal to accomplish this end, but rather to suggest an idea as a potential stimulant to future thinking in this direction.

The thought would be to provide a practical means for representatives of management and labor leadership to get together under relatively informal circumstances to talk over matters on which an exchange of thinking might be mutually helpful, and which might well contribute to a gradual improvement in the country's industry-labor relations climate.

Limited Objectives

Such gatherings should be geared to limited objectives, without any grandiose ideas about settling burning issues or solving all differences between management and labor. The goal would be to facilitate intercommunication between industry and labor leaders, to the end that both are more intelligently informed, and thus able to do a more constructive job of dealing with their mutual problems.

Personal Contact Benefit

A corollary benefit of the program would be the opportunity for personal contact between management and labor leaders. This would have the tremendous value of wearing down useless suspicions and providing a better basis for discussing issues on their merits, rather than from an emotional bias.

The responsibility for sponsoring the suggested program should be a joint industry-labor affair. Tucking it under the benevolent wing of the U. S. Government, even if an appropriate bureau or department could be selected to do the job, would kill the program before it got started. But arrangements for such a joint responsibility are completely conceivable. An organization, or organizations, representative of all types and sizes of companies, could represent industry. The new consolidated AFL-CIO would be the logical agency to represent labor.

Selecting Representatives

The organizations sponsoring the industry and labor groups could select representatives to attend each session. The total number attending should be restricted to stimulate discussion. Different representatives should be selected for each conference, in order to permit deep penetration of industry and union leadership over a period of time.

But actually the exact form and arrangements for these meetings are distinctly secondary to developing a plan that, recognizing the interdependence of industrial and union leaderships, provides them a forum to communicate with each other as groups.

The Seed of an Idea

This proposal is presented without any illusion that there will be immediate and eager takers. The purpose at hand will have been fulfilled if the seed of an idea is planted which will root and grow, or if not, that it will contribute to a later and more successful planting of such a seed by someone with a greener thumb than mine.

It seems thoroughly appropriate that the subject of improved communications between management representatives and union leaders should be presented at a meeting of the electrical utilities industry by a representative of an electrical equipment manufacturing firm. Electrical utilities and equipment manufacturers are in a real sense part of one industry, and there is no industry in the country with a greater stake in sound labor relations and the labor stability which can flow therefrom. In addition to the usual interests of any employer, this combined industry depends upon uninterrupted employment, improved productivity, and a constantly increasing standard of living for the sale of its industrial and residential power and for the health of its market for electric products for the home. Any contribution our combined industries can make toward more stable labor relations will be uniquely vital to the future of our companies, and will be a national contribution of the first order.

Public Dis-Utilities

(Continued from page 200)

We must, as I see it, preserve the basic rights of private individuals to acquire and use as private property whatever they have produced or otherwise acquired without theft. If political agents violate these rights and confiscate the property of others for the benefit of themselves and their friends, that should be labelled a public *dis-utility*, and those who carry out such schemes should be labelled public *dis-servants*.

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How You Can Help Produce the Engineers and Scientists You Need

By L. R. Boulware
Vice President, General Electric Company

An address before the Twenty-Fourth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 6, 1956

I AM grateful for your invitation to discuss some possibilities as to how we can all help produce the engineers and scientists we and the country need. It is a privilege to participate with anyone in an effort to discover additional ways of improving the quantity and quality of our scientific and technical manpower. It is a special privilege to do so with you leaders of an industry which is blessed with such wonderful opportunities and which, as evidenced by your very interest here and conduct elsewhere, is so obviously alert to those opportunities.

How Big and How Critical

Here in this populous country, with our widespread opportunities for learning for all, our most critical shortage is people—people adequately equipped with the required education and available at the right place at the right time. In the long run, brain power may be the only limiting factor on how much energy we can produce and expend to produce all the food, clothing, shelter, and extra satisfactions for the richer life we want and expect. It may also be the determining factor in whether we remain a first-rate power, or whether we even survive at all. A congressional committee recently reported that the Soviet Union—which produced 682,000 specialists and technicians in the period from 1928 to 1954 compared with 480,000 for the U. S.—is now training *twice* as many as we are each year.

There are many varying estimates of our need for scientists and engineers. Perhaps there can be no exact estimate. In these matters one man "may have the strength" of ten. But it is generally agreed that we need about twice as many graduates in the physical sciences and engineering as the approximately 45,000 we are producing each year.

L. R. BOULWARE

What Kind of Problem?

I think we have evidence that there is adequate potential brain power present in the U. S. But half of the capable, and a third of the exceptionally talented, are lost during the educational process—and mostly in the earlier part of it. Obviously, we cannot afford this prodigious waste of our most precious resource.

For every 100 students entering the first grade, only 13 will graduate from college, and only three in science and engineering. If we could see to it that even a high proportion with the intellectual ability gets the kind and amount of education that will develop their optimum talents, we would not only greatly increase the number of college graduates of all kinds produced each year—but we would have also graduated about 75,000 scientists and engineers last year instead of the 45,000 actually produced—or roughly *twice* the number!

Here is the critical chain of events in producing a scientist or engineer:

1. The number of scientists and engineers graduated by our colleges and universities depends on the number of freshmen they have taken in with adequate preparation in math, physics, chemistry, and biology—and with the will and desire to carry through.

2. The number of high school graduates with these qualifications depends on the number who took the subjects in question in school. And the math preparation starts with algebra in the ninth grade at the latest.

3. The number of high school students who take the necessary math and science subjects depends on *how well* and *how early* we—teachers, parents, business and industrial leaders—help likely youngsters to appraise their opportunities, recognize their talents, and hitch their wagons to the star of science.

What Can We Do About it?

We are in trouble widely today because some secondary teachers and administrators have not placed a high enough value on math and science and have not shown an adequate understanding of the intellectual requirements and of the glamor of these subjects. In the secondary schools our first order of business is to shore up the sagging emphasis on these subjects, to give them and the teachers status, and to begin to fill up the decimated ranks of math and science teachers.

This oversimplification highlights many specific points of application in our own communities for efforts:

—to improve student guidance and career counselling

—to help teachers prepare themselves for better teaching, and to give them adequate equipment and aids

—to elevate the status of math and science courses, and of the teachers of those subjects.

In other words, our educated manpower problem today has resulted from our own lack of alertness—and of alerting the students themselves—ten or 15 years back as to the coming

requirements. We have to admit that we have simply failed to guide and motivate a sufficient number of our youth in directions for which they were naturally qualified and where they would be most useful in the interest of themselves and all others concerned.

I am going to offer this morning some of the things that General Electric has been doing to try to help increase the total supply of scientists and engineers. Many of these are the common, garden variety of things, but which are frequently overlooked, and which we have been doing long enough now—since 1945 in most cases—to begin to see some effect from them. In presenting them here, I would like to stress several points about them.

Something for Everybody

We in General Electric have been looking at the problem more and more in terms of something for *everybody* to do *everywhere*—and this is primarily in terms of our individual communities. Like many of our big national problems, many of the solutions, and perhaps the only solutions, may be found in our own communities.

I will outline what we do at the local and pre-college level to try to encourage and co-operate with educators and students. I will not go here into what we do in the way of fellowships, scholarships, matching alumni-support, outright grants, special laboratory equipment, and other things, for *higher* education. What I understand you are interested in is what we are doing to broaden the base of the educational pyramid — which consists of boys and girls in the secondary schools of America— and thus to increase the possibilities of a larger over-all supply.

A Long-Range Plan

A plan to produce more scientists and engineers is by its very nature a long-range plan. It takes 22 years to make a bachelor of science; it takes 30 years to make a professional engineer or scientist. Even if we go back to the critical eighth and ninth grades —critical because the lack of motivation to start math and science at this period can change the student's life and affect all our lives—it still takes nine to 12 or more years. However, I don't believe that a group of men as foresighted as this one, and whose philosophy is summed up by one of your more thoughtful members in the words, "project, achieve, and then project again," should be disturbed by a little long-range planning.

We believe that for the long run the only solution is an over-all solution. We don't want to rob Peter to pay Paul. We want to increase the *total* supply. As Dr. James R. Killian, President, Massachusetts Institute of Technology, has said: "For the long pull I think the nation would be better served by augmenting the total pool of exceptional talent so that all our professions benefit rather than by giving exclusive attention to getting more talent into science and engineering, even though the need for manpower in these fields is at the present time the most urgent." And he urges that we attempt to build up science and engineering through methods that give all of us a fair share of a larger talent pie.

I submit that any program for augmenting our scientists and engineers —that is unrelated to a concerted effort to identify, encourage, and more fully educate *all* of our youth to their maximum ability—is too short-sighted for an industry whose interest in growth is as broad and fundamental and creative as is the electrical industry's.

The Right Thing to Do

There is another reason why we should encourage all students—the genius and the handicapped, the gifted and the crippled, the average and the above-and-below average—in their opportunities to develop to the maximum of their ability. *Because it is right.* And in the long run the things that are right are the only practical and realistic things to do. If we "belong to the ages"—as I believe is our high privilege in this great electrical industry—we have no alternative but to do what is the long-range and high-grade thing to do. We do not live by today's kilowatts alone.

Finally, in presenting the following possibilities, I do not of course urge that you take all or any of these programs and adopt or adapt them to your utility territory. I know they are not entirely applicable as to proportions and timing in your various situations. I suspect that we have had individual phases of the problem in more acute form than you—perhaps partly because of the very great technical demands we are so happy to have had you make on us. We make no pretense that we have always found the right answer. In fact, we have to confess that in our 153 plants in 115 different cities we haven't been able to find very much uniformity in the problems and answers even for ourselves.

I will try to present them only as some of the specific things we have done, and give you the benefit of our experience for what it is worth. On the basis of our experience in tackling this problem, we believe that it can eventually be solved at the local level in our communities, and probably it can only be solved there—and if the things we do are good things, the results will be satisfactory.

Comic Book Series

For slightly more than a decade now, General Electric's "Adventure in Science" series of comic books have been used in high school classrooms as supplementary, up-to-date teaching aids. There is no good place to begin but at the beginning in this educational process—and a scientist or engineer usually begins in the eighth or ninth grade or earlier. Since the comic book program was initiated in 1945, General Electric has mailed *at the request of teachers* some 50 million comic books treating scientific, engineering, economic, and social subjects for use in the high schools and junior high schools of this country. In addition, you of the electric utilities have purchased some 700,000 comic books at cost—about 3 cents apiece—for distribution in your own territories. Carefully prepared with the assistance of our ablest scientists and engineers to be authoritative and up-to-date, the adventures of the comic books' main characters—Ed, Johnny, and Jane—glamorize the role of science and engineering in the exciting world of the electrical industry.

Guidance Booklets

In addition, over 12 million of our educational guidance booklets—*The Three Why's, The Four Why's,* and *What Do You Think About?*—have been distributed to school vocational

counselors and guidance teachers. The Report of the Connecticut Fact-Finding Commission on Education reported, "What really showed up was the fact that students themselves had the demand for more and better guidance at the top of the list." Incidentally, we think the schools can do a much better job of counselling if we businessmen will only give the help we know how to give in aiding a constant exchange of information and opinion among students, teachers, parents and other counselors, prospective employers, public servants, and other members of the community.

Progress Posters

Another thing we have done with rewarding results has been to offer Progress Posters to classes. Today they hang on the walls of some 32,000 classrooms as visual reminders of the role of "Progress" and the work of the scientist and the engineer in creating the extra satisfactions for the richer life we want and expect. These posters are taken to 32,000 schools during the school year.

Our distribution of all publications for school use over a ten-year span totals over 80,000,000 copies. Since 1945, it is estimated this direct mail program has been reaching from 30 to 50 per cent of all high school students through science, math, guidance, and social studies teachers. Today, that means we are telling a technical career story to about 3.5 million boys and an equal number of girls.

Advertisements, Motion Pictures

We sponsored a series of ads in a public relations campaign addressed to opinion leaders appearing in national newsweeklies and important monthlies. While not designed primarily for school use, messages like these do help to alert people to the problem, and point out some of the opportunities and indicate certain steps to a solution. Of course, they also reach both students and teachers in school libraries and in their homes.

Like our educational publications, General Electric's motion pictures have helped to stimulate an interest in science, and to do so even in those schools which have no physics and chemistry courses—*which is over half of all the high schools in this country.* A General Electric Catalog of Motion Pictures, available to all schools, describes films which are stocked in 18 General Electric film libraries conveniently located across the country. The available motion pictures cover subjects ranging from atomic energy to X-ray.

Obtaining Laboratory Equipment

Without the necessary laboratory equipment, high school science and technical programs are greatly weakened. Here is another area where General Electric attempts to contribute to education at the community level—by helping local high schools to obtain modern equipment for their laboratories. There is a special economic problem involved in the development of adequate science programs in our high schools. Science laboratories are expensive and require more room and equipment per pupil than do academic subjects. There is a special opportunity for most of us to help contribute to the solution of these problems in our communities and insure adequate laboratory facilities for our schools.

The well-known General Electric House of Magic, which first played at the Chicago's World's Fair in 1933, has in periodically revised versions been kept on the road ever since, showing primarily to school audiences totaling about three-quarter million students and teachers a year. For the 1955-1956 season, three teams took the show to three different regions, and usually presented it with a regional utility company as a joint sponsor. After the show the demonstrators held special meetings with teachers, to assist in guidance counseling and to help equip and inspire them to sell science and engineering careers to their students.

Science Fairs

Another means of stimulating interest in science and engineering at the local level are high school Science Fairs. Like many of the other things we can all do, the contribution we can make here is primarily a counseling one, and the investment is mostly in terms of manhours. General Electric has prepared a document on how to organize high school Engineering Clubs to help students and others interested in getting started.

Exchanging Visits

Programs in our communities which involve teachers and students spending a day inside local industrial establishments, or engineers and business people returning the call and spending a day in schools, can stimulate interest in science and engineering careers and alert students and teachers to career opportunities in industry. In either case, the programs are simple, the facts technical, and the glamor is provided simply by our plant and laboratory processes. In fact, our experience indicates special attention to a few, or plush treatment for all, should be avoided.

The General Electric Theater on television Sunday nights reaches 35 million people of all listening ages in practically every community in the country. Many of the commercials by Don Herbert (Mr. Wizard) glamorize the contributions and careers of scientists and engineers. Also guest appearances of Mr. Herbert in the community provide a local tie-in and an opportunity for community participation.

Apprentice Program

General Electric's Apprentice Program now has 8700 graduates. This is an example of the possibilities of using cooperative courses to try to generate part of our own requirements out of people already having experience and who are on our payrolls. In addition to supplying technically trained manpower to supplement our scientists and engineers, the Apprentice Program now opens the way to a science or engineering career for the specially gifted or the specially ambitious by providing college credit for some of the basic courses. Thus, with two additional years of a study, a student from our own payroll can become an engineering or science graduate of an accredited college or university.

These are some of the things we have been doing long enough to begin to get some effect from them, and there are encouraging signs here and there that the tide has begun to turn. A number of schools report that registration in math and science courses is climbing again. A nationwide survey of students exposed to our material shows a doubling in the last ten years

of the number of boys and girls who think math and science courses will best fit them for their chosen career, and enrollment in engineering colleges has been increasing slightly for the past four years. Many people and many things, of course, have contributed to bring this about. There is something for *everybody* to do about developing the educated manpower we need.

Summer Fellowship Program

Since 1945 General Electric has had a unique and rewarding experience in trying to help local schools equip teachers and stimulate appropriate studies to the end that a higher percentage of the students will prepare for and pursue science and engineering careers.

In 1945 at Union College in Schenectady General Electric established the first of a series of summer fellowship programs for high school teachers. Science teachers from a 12-state area are invited to apply for the fellowships, which consist of six weeks of advanced college training in their field. Tuition, room and board, and travel expenses are included for 50 Fellows who are selected on the basis of their own application and the recommendation of principals and superintendents. The college selects its candidates and is in complete charge of administering the program. The company underwrites all of the costs, but it also has another role. The extra-curricular activities include a series of unpretentious luncheons, dinners, and similar gatherings, at which General Electric officers, managers, and specialists not only meet with the teachers and answer specific questions but address them on various aspects of doing business—marketing, engineering, manufacturing, finance, human relations, and so on. The teachers are taken on field trips to plants and laboratories. These are not just walk-throughs by any means. Company specialists devote many hours to demonstrating applications of the subject taught by the teacher and supply pertinent problems to be solved.

Since 1945 there have been 11 groups of 50 Fellows at Union College. In 1947 a similar annual program for 50 high school physics teachers was established at the Case Institute of Technology in Cleveland. In 1952 an annual program for 50 mathematics teachers at Rensselaer Polytechnic Institute in Troy, New York, and in 1953 a similar program for 50 mathematics teachers was established in Purdue University, Lafayette, Indiana.

The four programs, taken together, have provided 1350 high school teachers from a 24-state area with summer fellowships in the two important fields. All these programs will be functioning again in the summer of 1956, and, in addition, a new annual program for 50 high school physics and chemistry teachers from 14 far western states will make its bow at Syracuse University.

Two Original Purposes

The two original purposes of the summer fellowship programs were (1) to refresh the teachers in their subject matter field through a graduate credit program offered by an outstanding university, and (2) to place the teacher in a position to attract more students to his courses and motivate more student accomplishment by giving the teacher an intimate picture of the importance of the subject taught to the student's future.

In addition to academic standing and available facilities, the universities have in each case been selected also for their locations at or near a substantial General Electric plant and laboratory site. This makes readily available the company's key personnel and facilities for the extra-curricular part of the program. As the programs have developed from the original experiment, the teachers have found time spent outside of classrooms, rubbing shoulders with business people, and seeing applications of their subject in industrial operations, equally valuable and memorable. The Union and RPI groups have their extra-curricular focal point at the General Electric Plant and Research Laboratory in Schenectady; the Case group is located near the company's lamp and lighting research center at Nela Park, Cleveland; the Purdue group makes trips to the G-E manufacturing center at Fort Wayne; and the Syracuse group will have the advantages offered by the company's Electronics Park development.

Incidentally, General Electric people associated with the program lean over backwards to make the point that mathematics and science courses, in their opinion, are essential to the sound education of the individual in *any* field he may choose—not just engineers and scientists. They feel that some young people may have backed away from these important subjects because they were being too closely associated with an engineering or scientific career choice.

Evidences of Worth

The most satisfying evidence of the worth of the programs is found, not in statistics, but in the words of the teachers themselves. Some of the phrases from their letters are revealing: "As instructors we can now speak with added assurance and authority concerning many new developments . . ."; "My classes are growing larger each year because I have been able to make the course more interesting . . ."; "The General Electric Summer Fellowship definitely improved my teaching . . ."; "Every teacher needs prestige and General Electric Summer Fellowship programs give him that . . ."; "My sights are set higher . . ."; "People in town still mention my having won the fellowship a few years ago . . ."; "Gave me an entirely new outlook toward big business, its problems and services to all of us"; "Am considerably more content with my profession . . ."; "I found that there is a human side to management . . ."; and so on.

Not so strangely, perhaps, living and studying for six weeks with other teachers, comparing methods, and indulging in shop talk creates strong bonds. Today General Electric awards lapel pins and puts out alumni news sheets at the request of the Fellows. The latter write articles in educational journals about their experience and thus encourage other teachers to apply. Perhaps even more important, graduates have now accumulated some 6,000 teacher-years since the beginning of the programs, and they may thus have had some effect on the teaching of science and math to some 500,000 students.

Those of you from the larger utilities who are thinking about the possibilities of a program of this kind will

most likely find a college right in your territory. If a local program can be organized by you—with or without association with other local people at a local college—two objectives are obviously being achieved simultaneously:

—Getting additional high school teachers alerted, interested, and additionally equipped each year, and

—Interesting the college itself in turning out more teachers and more students who are focused on the educational and engineering opportunity, and who are prepared to embrace that opportunity.

Joining with Others

Those of you from utilities with smaller territories may not have a self-contained opportunity along this line but may still want to explore the possibilities of joining with others interested in technological education in seeing what can be done to alert all concerned locally to their opportunities, and to get them to make the most of those opportunities. Again, there is just *something* for *everybody* to do. These include:

—Develop programs of teachers and students spending a day in your plants, and of your people returning the call and spending a day in the schools.

—Offer speakers to schools.

—Help local schools and their students put on science fairs, mathematics contests, and engineering day rallies.

—Support adequate math and science courses in schools, and help them to get adequate laboratory equipment and facilities.

—Lend your support and assistance to better guidance counselling in your communities.

—Help to obtain adequate pay and status for teachers.

—Inform teachers and students of teaching aids, etc., available locally and nationally.

Many of the things I have described here are cooperative undertakings, where mutual interest rather than support dollars are the paramount consideration. We have a statement on financial support to education by business, if anyone should be interested. But business interest in the secondary schools is not usually a matter of putting out money for support, since here we are dealing for the most part with public schools. Many of the problems are of the kind that concern people as taxpayers and citizens. We find, however, that mobilization of community leadership to improve the status and compensation of teachers, or to increase the number and raise the sights of the students, usually depends on businessmen taking the lead. We note that the program of teachers and students spending a day inside local industrial establishments to see the application of technology, or of us business people returning the call and spending a day in the schools, are of course almost totally dependent on businessmen taking the initiative.

I am encouraged to know of your interest in the problem and your eagerness to find something you can do at the local level. I am happiest of all to know your interest springs not only from your hopes of getting some of these engineers you may help to develop for yourselves, but just as much from what you can contribute to the common pool from which we all draw —and what you can thus do directly by example in good citizenship towards a better America—fully electrified of course!

What's on America's Mind

(*Continued from page* 180)

in which a legion of candidates are advancing their personal and party claims to public office. Among them, are those who seek election to the most powerful position in the world, the Presidency of the United States.

Stimulating, Inspiring Event

This leap-year event could be a stimulating and inspiring proposition —a re-examination of governmental practices, a re-appraisal of political and economic policies, and a re-assessment of social accountability. In short, it could be a workshop on citizenship. But, you say that such is not the case. You seem to feel that our political campaigns all too frequently take the form of a promising match. You believe our democratic concepts would be reinforced if we had more leadership and less *followship*. You want the kind of leadership that makes us *think*—instead of followship that tells us what *it* thinks we want to hear.

What Would Happen

We have often wondered—you and I — just what would happen if a political Daniel should come to judgment. What would happen if this man, possessed of the God-given power to "make interpretations and dissolve doubts," should announce for public office?

Suppose that he should promise nothing but the equivalent of the Churchillian promise of blood, sweat, and tears. Would he be heeded—or hung in effigy?

Suppose he should be elected, and suppose that upon some momentous issue with tremendous public appeal, he should say—as did Senator Lamar of my own state many years ago—"Today I must be true or false."

And then suppose that he took a position for integrity instead of expediency. Would he be returned—or retired?

I believe that you are looking for men like that in public office, but are you looking hard enough?

And now I close the book on my report.

I conclude, as I began, by saying that no one could emerge from my experience of the past 12 months without becoming a better American.

Whenever I have been abroad, and the hour for returning finally arrives, my thoughts turn to these magnificent lines of Henry Van Dyke:

"Oh, it's home again, and home again, America for me!
I want a ship that's westward bound to plough the rolling sea
To the blessed land of *room enough* beyond the ocean bars
Where the air is full of sunlight and the flag is full of stars."

Here in America the air *is* full of sunlight and the flag *is* full of stars.

I have never been so proud to be an American.

CONVENTIONS AND MEETINGS

1956

JULY

16-21 International Organization for Standardization Council Meeting, Geneva, Switzerland

19-20 EEI Industrial Relations Committee jointly with Personnel Sections of the Wisconsin Utilities Assn. and North Central Electric Assn., Green Bay, Wis.

24-27 NARUC Annual Convention, Sheraton Palace, San Francisco, Calif.

SEPTEMBER

13-14 EEI-AGA Organization Meeting, Edgewater Beach Hotel, Chicago, Ill.

14-15—Public Utilities Association of the Virginias 38th Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

17-19 EEI Industrial Relations Annual Round Table Conference, Drake Hotel, Chicago, Ill.

17-21 IES National Technical Conference, Hotel Statler, Boston, Mass.

24-26 EEI Meter & Service Committee, Purdue University, Lafayette, Ind.

26 PIP Steering Committee, Blackstone Hotel, Chicago, Ill.

26-28 PIP Workshop Conference, Blackstone Hotel, Chicago, Ill.

OCTOBER

1- 3 EEI Prime Movers Committee, Radisson Hotel, Minneapolis, Minn.

1- 5 AIEE Fall General Meeting, Morrison Hotel, Chicago, Ill.

3 EEI Area Development Committee Meeting, Radisson Hotel, Minneapolis, Minn.

1956

3- 5 Indiana Electrical Association Annual Convention, French Lick Springs Hotel, French Lick, Ind.

4- 5 EEI Area Development Workshop, Radisson Hotel, Minneapolis, Minn.

7-10 Rocky Mount Electrical League Annual Fall Convention, Broadmoor Hotel, Colorado Springs, Colo.

10-11 Southeastern Electric Exchange Accounting Meeting, Hotel Seville, Miami, Fla.

15-16 EEI Electrical Equipment Committee, Hotel Statler, Cleveland, Ohio

15-17 AGA Annual Convention, Acctg. Headquarters, Haddon Hall Hotel, Atlantic City, N. J.

18-19 EEI Transmission and Distribution Committee, Hotel Statler, Buffalo, N. Y.

22-24 7th National Conference on Standards, Am Standards Assn, in conjunction with 38th Annual Meeting, Hotel Roosevelt, New York, N. Y.

NOVEMBER

12-16 NEMA Meeting, Traymore Hotel, Atlantic City, N.J.

15 EEI Industrial Relations Committee, EEI Headquarters, New York, N. Y.

25-30 ASME Annual Meeting, Hotel Statler, New York, N. Y.

26-28 EEI Accident Prevention Committee, Statler Hotel, Hartford, Conn.

DECEMBER

6- 7 EEI-AGA 1957 Conference Planning Committee, EEI-AGA Headquarters, New York, N. Y.

Report of the EEI Committee on Atomic Power

(Continued from page 170)

2. Resolved that the Committee on Atomic Power favors the formation of a national evaluation group to provide a continuing means for the scientific, engineering, and economic evaluation of power reactor types and designs and selection of those reactor types and designs which merit development and construction.

3. Resolved that the Committee on Atomic Power recommend that the Board of Directors of EEI call a Conference of Company Presidents, to be held at the earliest practicable date, for the purpose of reviewing the atomic power program in the United States, particularly the role the investor-owned power companies, and so that necessary decisions can be made on the means by which their further and continuing participation in this program on an expanded and accelerated scale may be brought about.

4. Resolved that the Committee on Atomic Power recommend that the Board of Directors of the EEI appoint a permanent full-time Executive Secretary of the Committee on Atomic Power for the purpose, among others, of assisting that commitee and the members of the Institute in furthering the development of atomic power.

National Electrical Week

(Continued from page 195)

cally" project closed circuit telecast, to be presented in advance of the observance and timed so as to help generate greater interest in the nationally celebrated event.

Also, it was reported that General Electric Co. has become the first of the major electrical manufacturing firms to announce that it plans to salute the "Week" on its national television program on February 10, 1957. This year, national TV salutes to the observance were carried on programs presented by such companies as Sylvania Electric Products, Inc., and Westinghouse Electric Corp., in addition to General Electric Co.

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